



TO CORRESPONDENTS.—Communications for the Editor should be addressed "To the Editor of the CHEMIST AND DRUGGIST," Colonial Buildings, 11a, Cannon Street, and if intended for insertion, should be written on one side of the paper only, and authenticated by the real name and address of the writers, not necessarily for publication, but as a guarantee of good faith.

Advertisements, Subscriptions, Orders for Copies, and all communications to be addressed to "THE PUBLISHER."

REMITTANCES to be made payable to Edward Halse; and POST-OFFICE ORDERS payable at Cannon Street Post Office, but to be addressed to "THE PUBLISHER."

SCALE OF CHARGES FOR ADVERTISEMENTS.

One Page	..	..	..	..	..	..	..	..	£5	0	0
Half ditto	..	..	..	..	..	..	..	..	2	15	0
Quarter ditto	..	..	..	..	..	..	..	..	1	12	0

Special Rates for Wrapper, and the pages preceding and following literary matter.

The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Twelve insertions.

Seven Lines and under	..	..	..	..	..	..	..	..	0	4	6
Every additional Line	..	..	..	..	..	..	..	..	0	0	6

Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

All Advertisements intended for insertion in the current Month must be sent to **THE PUBLISHER** on or before the 12th, except Employers' and Assistants' Advertisements, which can be received up to 10 a.m. on the morning previous to publication.

OUR COUNTRY AND COLONIAL SUBSCRIBERS are requested to furnish the Editor with any trade gossip that they may consider interesting.

Subscribers are requested to observe that, for the future, the receipt of *THE CHEMIST AND DRUGGIST* in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simple because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

Editorial Notes.

THE columns of the *Times* have lately been opened to an instructive correspondence between Professor ATTFIELD, of the Pharmaceutical Society, and Mr. G. J. SYMONS, that energetic "clerk of the weather," who has done so much to promote the systematic observation of British rainfall. The latter, in pointing out a blunder in the recorded temperature of the Crystal Palace, finds fault with the expression "degrees of frost," which is often applied to temperatures below the freezing point of water. Dr. ATTFIELD defends the phrase and recommends meteorologists to change their thermometric scale to the more scientific centigrade scale, according to which, "degrees of frost" and "degrees below zero" would be equivalent phrases. Mr. SYMONS in reply, asserts that the short degrees of Fahrenheit's scale are better adapted for meteorological purposes than the longer centigrade degrees, and gives a table of recorded temperatures according to both scales, showing that decimal fractions must be extensively used in the centigrade equivalents of Fahrenheit's degrees. Dr. ATTFIELD sees through his opponent's feint, and exhibits his own skill of fence by a few telling thrusts. He reminds Mr. SYMONS that meteorology is not neglected in countries where the centigrade scale is employed, and that the general adoption of this scale, while tending to the avoidance of errors of calculation, would bring British and foreign observations into direct accordance. The misleading character of a table of equivalents in which whole Fahrenheit numbers are taken does not escape his notice, and he shows that a column of whole centigrade numbers would require for comparison fractional Fahrenheit figures. In conclusion he says:—"The objections to long thermometric degrees come badly from men whose barometric

column is divided into inches; the objections to fractions of degrees come ungraciously from men the height of whose barometer is reported by figures running to the second place of decimals."

THE following Premiums have been placed at the disposal of the Council of the Society for the encouragement of Arts, Manufactures, and Commerce, for the term of seven years, by Dr. SEPTIMUS PIESSE, F.C.S.:—

1. A Premium of £5, for one pound of OTTO OF BERGAMOT, of the value of 16s. or more in the London market, being the produce of plants (*Citrus bergamia*) grown in Australia, New Zealand, Natal, any of the British West India Islands, or any other British Colony or Dependency. 2. A Premium of £5, for one ounce of OTTO OF ROSES, of the value of 20s. or more in the London market, being the produce of any variety of roses grown together in one plantation in Australia, New Zealand, Natal, any of the British West India Islands, or any other British Colony or Dependency. 3. A Premium of £10, for a canister of ENFLOWERED BUTTER OR FAT, so scented with any kind or sort of flower, either by infusion or enfleurage, or by means of these processes jointly, of the weight of 3 lbs. or more, and of the value of 6s. per lb. in London. The said butter or fat to be enflowered or infused with flowers grown for the purpose in Australia, New Zealand, Natal, any of the British West India Islands, or any other British Colony or Dependency.

WE understand that MESSRS. D'AUBNEY and WADE were elected members of the Pharmaceutical Society at the last meeting of the Council.

MR. U. J. KAY-SHUTTLEWORTH, the new Liberal member for Hastings, carries a practical knowledge of chemistry into Parliament. About two years ago he produced an admirable little elementary manual, entitled *First Principles of Modern Chemistry*. This might have become a standard work, had it not been for the author's rash adoption of an over-elaborate system of notation. The scientific element of Parliament will be materially strengthened by the sound attainments of this young chemist.

THE Society for the Suppression of Sunday Trading in Edinburgh has just issued a report, from which it appears that an average of 493 persons keep their places of business open on Sundays. Of the shops found open 46 belonged to druggists, 101 to grocers, 162 to confectioners, and 2 to tobacconists.

AT the Society of Arts the second course of Cantor Lectures for the present session will be given by Dr. BENJAMIN H. PAUL, F.C.S. The course will consist of four lectures, "On the Phenomena of Combustion, and the Chemical and Physical Principles involved in the Use of Fuel, and in the Production of Artificial Light," to be delivered on Monday evenings, the 7th, 14th, 21st, and 28th of March, at 8 o'clock.

WITH this number we enclose a supplement giving as clearly and concisely as possible the requirements of the Pharmacy Act respecting the sale of poisons. It has been drawn up by the Council of the Pharmaceutical Society for the use of the trade, and it is to their courtesy we are indebted for the opportunity of presenting the circular in this form to our readers. We advise all chemists to stick this sheet in some corner of their shops where it will be convenient for reference.

ONE of our oldest contributors, Mr. CHARLES W. QUIN, has accepted a responsible appointment on the *Levant Herald*. We are happy to say, however, that he has not deserted the CHEMIST AND DRUGGIST. He has already favoured us with an important communication from Constantinople which will be found in another page.

HASCHISCH-EATING.

IT is, I think, Voltaire, who remarks, with a large amount of truth, that the veins of the inhabitants of hot climates run with a mixture of blood and vitriol, the latter liquid giving them the hot passions that we always associate with the circumstance of southern birth. Certain members of the vegetable kingdom seem to follow the example of their animal relatives, for their bloods, which are comparatively harmless in a cold or temperate climate, assume poisonous properties exactly in proportion to the proximity of the place of their growth to the Equator.

There is a remarkable instance of this in a little plant, known to botanists as the *Pyrethrum roseum*, which, when grown in this climate, is as innocent in its juices as a cabbage, but which, if reared only a few degrees to the south, develops poisonous properties, and becomes known to cleanly housewives, with a proper dread of fleas, black-beetles, and similar small deer, as *Insecticide Vicat* or *Persian Insect Powder*.

But, perhaps, the most striking instance of the influence of climate in changing the chemical constitution of the juices of plants is to be found in the Indian hemp, *gunjah*, or *bhanga*, of the East. This plant, the *Cannabis sativa* var. *Indica* of botanists, is almost identical with the ordinary hemp grown in this country; indeed, some say that it is not even a variety, but under the influence of the tropical sun of India and Persia, it develops a certain resinous secretion possessed of very singular intoxicating properties, the same plant growing in northern climates being quite free from it. The secretion exudes from the stem and leaves of the plant somewhere about the period of flowering. The mode of collecting it is peculiar, and differs according to the locality. In Nepal, it is gathered by hand with great care, and is known as *momeea* or *waxen churru*, and is the most highly esteemed of all. In Central India, men clothe themselves in leather, and then run through the plantations until they are covered with the resin, which is carefully scraped off, and sent into the market as the ordinary *churru* of Cabool. In other districts, the leathern clothes are dispensed with, the gatherers using the skins, which they seem to imagine that Nature has given them for the purpose of collecting *churru*. In Persia, the gathered plant is squeezed between cloths, which are afterwards scraped. Mixed into a kind of sweet-meat, with honey, butter, and spices, the resin is known throughout the East as *haschisch*, this being the form in which it is best known to European travellers. De Sacy derives our word *assassin* from the Arabic *haschischin*, an eater of *haschisch*, and states that during the Crusades, the Saracens used to intoxicate themselves with Indian hemp and rush wildly into the Christian camp, slaying the ancestors of our Howards and Percies in their sleep.

It is also used in other forms in different localities; *momeea*, *churru*, and *haschisch* being reserved for the upper ten thousand of the Eastern millions. The plant dried whole is known as *gunjah*, the dried tops, buds, and larger leaves as *bhanga*. But under whatever form it is consumed the effects are the same. It acts in small quantities as a powerful intoxicant, producing great exhilaration, but

leaving no unpleasant after-effects behind it, like opium or alcohol.

Dr. O'Shaughnessy, to whom we owe its introduction into medicine in this country, states that its effects are surprisingly greater when administered in a tropical country than in England. A single grain of the concentrated extract was sufficient to send a native Hindoo into a state of catalepsy, whereas as much as twenty grains have been administered in this country without producing anything like the corresponding effect. No doubt the vitriol in the Hindoo's blood may have aided the action of the drug.

Some time since, my friend, the late Robert Warrington, of Apothecaries' Hall, showed me a fine collection of Indian pharmaceutical plants, and amongst them were several bundles of *gunjah*. The temptation to become a *haschischin* was too strong for resistance, and I begged a few buds for experiment. I left Apothecaries' Hall about 3 p.m., and immediately devoured the three or four dried buds, each being of the size of a small nut. I had never read a detailed account of the effects of Indian hemp, and felt particularly disappointed at feeling no immediate effect, supposing erroneously that exhilaration would follow the act of swallowing, as in the case of alcohol. By the time I reached Charing-cross I gave the whole affair up as a failure, supposing either that the plant had lost its power through age, or that I had not taken sufficient. About six o'clock the same evening, I joined some friends with whom I had appointed to dine at a West-end restaurant. We had, however, hardly entered the place when I felt a most unusual thrilling sensation passing through my arms and chest, reminding me of the effects of a very weak induction current. The thrill gradually extended itself until it became general—in fact, the usual symptoms of hemp intoxication had begun. I was immediately seized with an irresistible desire to be alone. I consequently made some lame excuse for leaving my friends, and, after many reproaches and much remonstrance, I found myself once more in the street. After the first few breaths of fresh air, the tingling sensation increased most pleasantly, and I set off towards Regent's Park at the rate of five miles an hour—not that there was the slightest need for haste, or that I wanted to go to Regent's Park, but I felt that I *must* walk. When I had walked a couple of hundred yards, all feeling of touch seemed to have disappeared. I felt as if my body was composed of some immaterial essence, through which my blood, which seemed to be a shade less immaterial than the rest of my frame, was coursing rapidly. Whether the peculiar thrilling sensation was caused by the action of the hemp resin on the nerves I am not a therapist enough to say; but it seemed to me as if my veins, arteries, and blood had been suddenly endowed with feeling. Sometimes I fancied I could almost hear this extremely pleasant tingling of every fibre of my body. When I reached the Regent's Park, I sat down to enjoy my pleasurable sensations. The sense of touch had already disappeared, or, perhaps, I should say, become modified. I touched nothing, I felt nothing. In passing round the corner of a street, I struck the back of my hand violently against a lamp-post; but although the blow left a large bruise behind it, I did not feel it; all I knew was that my hand had been stopped in its movements by something.

About this time my sense of time and distance left me. It seemed that since I left my friends I had lived centuries. How long I really sat enjoying myself I know not; but at last it occurred to me that I had better go to Victoria Station, and take the train to Croydon, where I then lived. I rose up from the seat, and instantly found myself in a chemist's shop, at the further end of Regent-



St. Leger Evans.



street, asking for lemonade. The assistant left the shop to get it, and, after he had apparently stopped away for about ten hours, I rushed out of the shop, cursing his dilatoriness, for I was very thirsty. I sped along Piccadilly at a furious pace, threading my way in and out of the crowd most cleverly. All this time the thrilling sensation continued to increase, and everything I looked at seemed to glisten before my eyes. When I reached Sackville-street, it again occurred to me that I was thirsty, and I turned into a confectioner's, and asked for some tea. I had at first intended taking a glass of claret and water, but I thought that the alcohol might interfere with the experiment in which I was acting as the *corpus vile*. I sat down on nothing, laid my arm on a marble table made of nothing, and my feet touched nothing as they rested on the floor—everything was etherialised. My pulse was not quickened, and the thrilling seemed to keep time with it. I was pretty warm, of course, owing, no doubt, to the violent exercise I had taken. My brain was perfectly clear, and I debated with myself a long time whether I should take the tea that was brought to me or not, not knowing what disturbing effect the theine might have on the hemp. I argued, however, that all it would do would be to decrease the violence of my symptoms, which were increasing in strength every moment. In order to see how far my brain had been affected, I took up an evening paper, and found that by a very slight effort I could discontinue taking cognizance of the thrilling, and read, and understand what I read, with perfect ease, although the letters glistened every now and then with great brilliancy. I could also write with perfect steadiness. I tried numerous experiments with my memory and will, and found them both obedient; the latter, however, was exceedingly skittish. My hearing, smell, and taste were unaffected, except that near sounds appeared to come from an enormous distance. After leaving the confectioner's, my sensations, although perfectly pleasurable, became somewhat alarming. What if I had taken too much! What if I should die! Prudence dictated an antidote, but I did not know of one. Who did? Running through the list of my medical friends, it struck me that Dr. Lankester would be the best person for me to go to; so I set out for Savile-row at a furious pace, longing to be able to tell everybody I met that I was in an Indian hemp paradise. Had I been alone, I know I should have hurrahed or laughed boisterously, but I managed to restrain myself. When I reached the corner of Savile-row, a most absurd thought entered my head. What if I died in Dr. Lankester's presence! How in the name of all that was ridiculous could he, as Coroner, possibly summon himself before himself, and listen to his own evidence as to the cause of my death? This was a little too much for me, and I astonished the porter of the Albany by laughing loudly and wildly, until the tears ran down my face. When I recovered from my fit of laughter, I gave up all ideas of antidotes. A wonderful change had taken place—the thrilling had diminished, and my brain had actually split into two halves, one of which was perfectly sane, the other in possession of the demon of hemp, whether an endemon or a cacademon, I know not. I once more started for Victoria, my mad self thinking the most ridiculous thoughts, and continually urging my sane self to commit absurdities. How I escaped receiving several kickings, I know not, for the impulse to pull young ladies' hair, to shriek in old gentlemen's ears, or to bonnet young ones, all in the purest good nature, was almost irresistible. After battling in this way for about two or three hours, I at last found myself, or, perhaps, I ought to say ourselves, sitting quietly in the Mall, my mad half thinking endless absurdities, and my sane half quietly enjoy-

ing the fun. The gentle throbbing still continued, and appeared more audible than ever, and there was a slight oppression of the chest, that found vent in a heavy sigh now and then. The oppression manifested itself rather by a feeling of warmth in the locality of the diaphragm than by any positive pressure. The Westminster chimes struck seven o'clock, and my train left at half-past; so I stepped at once from the Mall into Victoria Station. This was the second occasion upon which time and space had become annihilated, and on both I had felt the necessity for extreme haste. At the station I met a friend, and we stood conversing at the carriage door for at least ten minutes. My mad self was put down for the time, and my sane self exerted all his power. Next day I asked my friend if he had observed the slightest oddity of thought or speech about my portion of the conversation, but he had noticed nothing of the kind. I found that I could read, think, and speak with perfect ease, in spite of the gambols of my madder half, and of the audible thrilling, the warm diaphragm, and the pleasant weight on my chest.

My ride to Croydon was most enjoyable: the rattling of the carriages, and the puffs of steam from the engine seemed to keep time with the throbbings of an immense soft ball of etherialised velvet inside my chest, the pleasant thrilling of my whole body still keeping up, but somewhat more feebly. The mad fellow at my side was particularly ridiculous and entertaining. Towards the end of my journey, he became very confused, and would only half-think his absurdities, breaking off in the middle in a very tantalising manner. Then came a period when he would think his thoughts over and over again, when he was, in fact, afflicted with a fit of mental stammering. I remember it occurred to the sane man that the mad fellow had suddenly turned into a mental Dundreary. Then it struck one of us—I don't well know which—that Sothorn must have thought out his great character under the influence of haschisch.

And all this time I felt no pain, no headache, no giddiness, no inconvenience at all. I had a mad fellow sitting by my side who amused me infinitely. My brain, so to speak, was polarised, and my veins ran with perceptible blood, both veins and blood being as ethereal and incorporeal as a halo.

When I arrived home, I was still enjoying my sensations, and had them more than ever under my control. I met my wife coming down the road with a scared face; and the thought instantly struck me that she knew all! Could Robert Warington have telegraphed to her? While I was asserting my superiority over my mad companion, she greeted me with, "Oh! I have had such a fright! I thought Willie was poisoned; what do you think he has been eating?" "Good Heavens!" I cried, utterly thrown off my balance. "What? Not Haschisch?" "No! Only blacklead; I thought it was poison, but Dr. T— says it is quite harmless."

This was the only time that I lost control over myself. My abnormal feelings gradually left me, my blood became silent again, and my veins sensationless; the weight gradually left my chest, and the two halves of my brain coalesced. The rest of the evening I spent in perfect calm, both of body and mind. I felt no after effects of any kind, beyond the pleasurable feeling that one experiences after a very pleasant dream. This account is written from notes taken the same evening. I had then never read any account whatsoever of the effects of eating hemp; I simply knew that it produced an exhilarating effect, without any after consequences. I have since been unable to find any trustworthy account of the effects of haschisch on Europeans, beyond the very meagre description given by Bayard Taylor in his travels in Egypt, and should be glad to be rectified to one.

HASCHISCHIN.

THE CHEMISTS' ANNUAL BALL,
JANUARY 19, 1870.

Treasurer—Thomas Billing. Secretary—T. Donald Watson.

"Nunc est bibendum, nunc pede libero
Pulsanda tellus."—Carm. l. 37.

CAN any stato a reason why Willis's should not be classic ground? Once more we have to record the success of the Chemists' Annual Ball—the fourth of the series. We had almost ranked the event amongst the pleasures of the past, when it was brought to our recollection by a poem, exactly two lines short, which, doubtless, yesterday afforded pleasure to the fair recipient—

"Of all the maidens whom I adore,
There's no one like my Terpsichoro."

The quantity is not entirely accurate, but the sentiment is of a nature to command respect.

Some may be interested in knowing the numbers usually present. They are as follows:—

1868	1869	1870.
260	270	300.

In 1869—though the gain of money is by no means an object of this social gathering—twenty guineas were presented to the Benevolent Fund, and a similar sum this year.

With regard to the attendance, the London members may always confidently be expected; but we were more than glad to welcome no few of our country representatives, and also to note the fact that not a single educational officer of the Pharmaceutical Society was absent. To the ladies, we offer respectfully a last word, dreading to encroach on their prerogative. This is not a public ball, except just so far as we are obliged to take a large room at St. James's to accommodate the guests.

The old, bad times, when each pharmacist glared at his neighbour as a sort of natural enemy, have vanished in the metropolis, and are fast disappearing in the provinces. The ladies, who make the sunshine of our homes, do not know how vastly they can hasten this desirable result. When the last dance is finished, and the dancers have departed, the good of this anniversary begins, which finds its true exposition in kindly afterthoughts, mutual consideration, and in the uprooting of that vile, paltry trade jealousy, which exists in no other commercial community, and which has kept us separated from each other far too long.

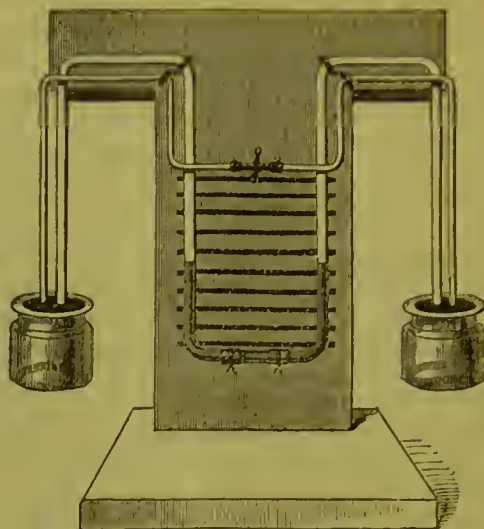
The ball ended at five o'clock in the morning. Professor Attfield made his speech, and some members of the committee had not forgotten how to waltz.

HOME-MADE DIFFERENTIAL THERMOMETER.

IN the Proceedings of the British Pharmaceutical Conference for 1868, Dr. Matthiessen's Improved Differential Thermometer with pendant bulbs is described and illustrated. This instrument is adapted for illustrating many fundamental facts relating to heat, and is now commonly employed in lecture-experiments by our leading chemists and physicists.

We have much pleasure in calling the attention of chemical students to a simple but effective modification of Matthiessen's thermometer, in which two wide-mouthed bottles and a few pieces of glass tubing are made to serve the purpose of the costly work of the glass-blower. The

construction of this home-made apparatus is plainly shown in the following engraving:—



The small bottles represent the glass bulbs of the original instrument. Each of these bottles is closed by a sound cork, through which two glass tubes pass. These tubes are bent into a series of angles by the aid of a gas flame, and their free ends are connected by pieces of india-rubber tubing. The ends of the smaller glass tubes do not meet, and their india-rubber connecting-piece is furnished with a pinch-cock. The two wider tubes are also connected by a piece of india-rubber tubing. This joint is made merely to avoid the difficulty of bending a single length of glass tubing into the required form. Some coloured liquid is introduced into the central portion of the main tube, and the whole arrangement is attached to a wooden stand bearing a scale formed of distinct horizontal lines. The height of the apparatus is 1 foot 7 inches; the greatest width, 1 foot. Two-ounce bottles are used for the air vessels, and they are supported at the height of about 5 inches from the ground, the main tubes rising 10 inches above the corks.

The instrument will not indicate general changes of temperature, but only differences between the temperatures of the two air vessels. If one of the air vessels is exposed to a higher temperature than the other, the air contained in it expands, and drives the coloured liquid in the tube towards the cooler vessel. The relative heights of the two columns of liquid in the vertical portions of the tube are plainly indicated by the scale attached to the stand. By opening the pinch-cock, the pressure upon each column of liquid is equalised, and the level is thus adjusted for a new observation without loss of time.

The following instructive experiments, which our younger readers may repeat with profit, will illustrate the use of this sensitive instrument in physical research:—

LATENT HEAT.

I.—*Disappearance of Heat during Liquefaction.* Place the air vessels of the thermometer in two tumblers containing water at the ordinary temperature. Having noticed that the level of the coloured liquid is undisturbed, throw into one of the tumblers some sodium sulphate (Glauber's salt). The solution of the salt is attended by a reduction of temperature, which is at once made evident by the movement of the coloured liquid towards the cooler vessel.

II.—*Latent Heat of Water.* Fill a vessel with coarsely-powdered ice, and allow it to stand in a warm room until much of the ice has melted. Place the air vessels of the thermometer in tumblers containing equal quantities of luke-warm water. Then add to one portion of the warm

water a weighed quantity of the unmelted ice, and to the other portion an equal weight of the ice-cold water. The rapid rise of the coloured liquid, in the vertical portion of the tube next the tumbler containing the ice, will prove that a given weight of ice has a much greater cooling effect than an equal weight of ice-cold water.

III.—*Evolution of Heat during Solidification.* By slowly cooling a solution of sodium sulphate, saturated at a high temperature, it is possible to obtain a cold supersaturated solution, which will crystallise suddenly on agitation. On plunging one of the air vessels of the thermometer into such a solution, which has been cooled down to the temperature of the surrounding air, the evolution of heat during the crystallisation of the salt will be manifested by the movement of the coloured liquid towards the cooler air vessel.

These three experiments illustrate fundamental facts relating to heat. When matter passes from the liquid into the solid state, heat disappears or becomes *latent*, and ceases to affect the thermometer; in other words, *sensible heat* is converted into *potential heat*. Conversely, when a liquid becomes solid, its potential heat is reconverted into sensible heat.

SPECIFIC HEAT.

IV.—*Oil and Water.* Into two tumblers introduce equal quantities of warm water, and test the equality of temperature in the two portions by means of the thermometer. Now add to one portion a given weight of cold water, and to the other portion an equal weight of cold olive oil. Mix the liquids by moving the thermometer up and down. The mixture of oil and water will be found to be warmer than the water, although its bulk is sensibly greater. [The greasy bottle should be cleaned with a little benzol after this experiment.]

V.—*Zinc and Lead.* Take equal weights of zinc and lead attached to threads, and having raised them to the temperature of 100° C. by immersion in boiling water, plunge them for a few seconds in equal bulks of cold water contained in two tumblers. On placing the air vessels of the thermometer in the tumblers, the movement of the indicating liquid will show that the zinc in cooling has parted with more heat than the lead.

VI.—*Relation of Combining Weights to Heat.* Repeat the last experiment, but instead of taking equal weights of zinc and lead, take weights having the ratio of the combining weights of these metals ($\text{Zn} = 65, \text{Pb} = 207$). On plunging the air vessels into the tumblers of the warmed water, there will now be no disturbance of the indicating liquid; in other words, the thermometer proves that 65 parts of zinc and 207 parts of lead evolve sensibly the same amount of heat in cooling through a given range of temperature.

The last three experiments illustrate very forcibly the difference between heat and temperature. The temperature of a body affords no indication of the actual quantity of heat it contains. A pint of water may raise the mercury of an ordinary thermometer to the same degree as a gallon of water, but it is obvious that the larger volume of the liquid contains the greater amount of heat. Equal weights of different substances, in undergoing a similar alteration of temperature, evolve or absorb very different quantities of heat. These quantities of heat, expressed relatively to the quantity required to raise an equal weight of water from 0° to 1° C. are called the *specific heats* of the various substances. Now the specific heat of olive oil is much lower than that of water, consequently, in Experiment IV., the oil robs the warm water of comparatively little heat, and the resulting temperature of the mixture is higher than that of the mixture of warm and cold water in the other tumbler.

Again, the specific heat of zinc is much greater than that of lead, consequently the mass of zinc used in Experiment V. gives out more heat in cooling than the mass of lead. The last experiment illustrates the important chemical fact that the combining weights of the elements are comparable quantities in their relations to heat. Thus 23 parts of sodium, 108 parts of silver, 65 parts of zinc, 207 parts of lead, and 210 parts of bismuth, give out or absorb sensibly the same quantities of heat in passing through the same range of temperature.

THE DRUG SALES.

THERE is a little district about midway between the Royal Exchange and the Tower of London which, if it be to a great extent wanting in architectural display and historical associations, is nevertheless to England and the world one of the most important spots in the Empire. This assertion may run counter to the prejudices of a few millions of our countrymen, among whom might be found champions for at least a dozen different spots in the United Kingdom. Scotchmen would place the "hub of the universe" somewhere north of the Tweed, and Irishmen would point to many more important spots west of St. George's Channel. Rotten Row, Tattenham Corner, and Capel Court would each and severally win the suffrages of many Englishmen; while the inhabitants of many a little rural borough, upon which "the eyes of Europe" had been frequently fixed, would put in its claims with a sublime confidence alone worthy of success. But when we think of the immense and constantly increasing importance of the trade of this country, and how every year the taunt of Napoleon respecting our shop-keeping tendencies is more amply verified, and accepted by us as a fair description of our national character, we may unhesitatingly affirm that the life of our people, the brilliance of our fashion, and even the glory of the British Constitution itself, rest to a great extent on the solidity of the foundations of our commerce, and further, that in the most distant quarters of the globe, prosperity is more or less dependent on the London markets. Considering this, then, we point to the little district we have mentioned, which comprehends Mark and Mincing Lanes, as the central spot of England's commerce, the nucleus of all her markets, and as it were the source of the wealth, the luxuries, the comforts, and the necessities of her inhabitants, and of vast multitudes of other populations as well.

In a few rooms here the prices of nearly every kind of the world's produce are regulated, and in those rooms are concentrated a large proportion of the commercial transactions of the whole country. It is our present purpose to allude more particularly to the drug sales, giving the substance of a few descriptive notes made on the spot. The room appropriated to these sales is in Mark Lane, above the Corn Exchange, and in the same building. By a slight figure of speech the sales are associated with Mincing Lane, where the sales of foreign produce are generally held, Mark Lane being chiefly devoted to the markets for grain exclusively. It is a fair-sized room, capable of holding some three to four hundred persons, perhaps more; and the attendance on sale days varies from about 150 to 300. In the middle of the length of the room, against the wall, is the rostrum; and seats and tables, with pens and ink, are provided for the reporters, brokers, and representatives of the wholesale houses, whose business it is to watch the tone of the markets, and note down their observations. The sales take place as a rule every alternate Thursday, but

they are not quite regular. When we add that the room has an unmistakable odour of a druggist's shop, the reader will have a tolerable notion of the place. This odour, we presume, is communicated by the buyers and sellers themselves, for there is no appreciable quantity of drugs there, not even samples. When a merchant imports, or has consigned to him, parcels of drugs, there is of course no reason in the world why he should not dispose of them privately at what price he can get; but suppose he should adopt the more usual course of first placing them in the public sales, he would employ a broker, who is also an auctioneer, and would doubtless put upon them reserve prices. The stock is then arranged in convenient lots, so many boxes of camphor or chests of gum arabic, or whatever the particular drug may happen to be, in each lot. The various parcels are distinguished by a brand and number, and samples are drawn from them, and laid for inspection at the office of the broker; or probable customers can, if they choose, go down to the wharf, and there examine the bulk. The broker gets his catalogues printed on the day before the sale, and supplies them to the usual firms. On the Thursday, there are perhaps a dozen or more auctions to get through, with one, two, or three hundred lots in each. It must be understood that at the sales only brokers bid for the lots, as no other person's offers would be accepted. Therefore, the wholesale druggist instructs his own broker as to the drugs he wants, marking the lots he is prepared to buy, and limiting the price he is willing to pay for them. The precedence of the auctions is fixed and notified by a placard on the wall; auctioneer No. 1 takes his seat on the rostrum, and the sale is commenced. If the bids do not reach the reserved price, the auctioneer closes the offers by naming the same, and then passes on. The auctions are got through in a remarkably short space of time, brokers who have instructions to buy making their offers promptly, and as the goods have all been previously examined, there is no time wasted here on that process, nor do the auctioneers spend much time in superfluous recommendations of their drugs. Occasionally we hear a jocular remark when bidding is slow that "This rhubarb is warranted to colour well," or something of that kind; but, generally, the business seems too serious to admit of humour, and anything like delay is met with cries of "Time" from various parts of the room. The moment one auctioneer has finished, another steps into his place, and so the ball is kept rolling from 11 o'clock in the morning until about 4 or 5 o'clock in the evening. A few visits to this room enables one to judge with very fair accuracy of the demand existing for the leading drugs, and somewhat to foretell the probable downward or upward course they are likely to take. It may also be noted that the prices paid at these sales are not often beyond, and are sometimes slightly below, the recognised market value. It is quite evident, too, that as the quality of different samples of drugs may vary to an almost unlimited extent, and by nearly imperceptible degrees, a considerable amount of skill and experience is necessary to enable one to buy well in these markets, and thus to become a successful wholesale druggist.

Before leaving this neighbourhood, it will be worth while just to step into another sale room, to note the points of similarity and difference in the manner in which the various businesses are conducted. We are fortunate enough to hit on a day when a coffee sale is being held, and these have acquired a special reputation, as exhibiting perhaps the most unruly assemblage which Mincing Lane has to show. We have already hinted at the air of respectability which pervades the drug sale room (we cannot but be convinced of the wealth and importance of the business transacted there);

but if we had to describe the general manner of the *habitudes* of this place, we should say that they seemed to be a set of competitors for the situation of "Bones" at St. James's Hall. The business is conducted with even more rapidity than in the drug sale room, but is certainly accompanied with more facetiousness, not to say uproariness. Most of the prominent brokers adopt a peculiar style of voice, each peculiar to himself, and most of them unnatural to the human race. The musical effect of these many sounds bursting forth almost, but not quite, simultaneously, may be easily imagined. Indeed, there are some "comic" entertainments in London far less amusing than a coffee sale in Mincing Lane.

THE METRIC SYSTEM IN TURKEY.

(FROM OUR OWN CORRESPONDENT.)

CONSTANTINOPLE, Jan. 23, 1870.

THE powers that be at Stamboul appear to be fully alive, in some things at least, to the necessity of following the good example set them by the rest of Europe in the way of social and political reform. I have just been favoured by the Grand Vizier with the translation of an Imperial rescript dated 20th *Djemazi-ul-Akhir*, 1286 (26th September, 1868), promulgating an organic law introducing the Metric system in all its entirety into the Turkish dominions.

The Council of Ministers has had this measure under consideration for some time past. In September last they presented a report embodying its principles and provisions through the Grand Vizier to the Sultan, who at once gave it his Imperial sanction.

The 1st Article provides that the system of weights and measures in the Ottoman Empire shall henceforth be founded upon the French standard metre, and that their series shall be formed by the decimal multiplication and division of the fundamental units. The names given to the new weights and measures correspond to the customary weights and measures nearest to them. It would be useless to give an account of the whole of these; one example will be sufficient. The decilitre, which contains about as much as an ordinary Turkish coffee-cup, is called the *zarf*, or cup, after the old measure of that name.

Article 2 orders that a standard French platinum metre, to be deposited in the treasury of the Imperial palace, shall constitute the primary standard of length.

The 3rd Article ordains that the metre shall be the unit of length, and that its multiples and subdivisions shall be decimal.

The 4th Article provides that the unit of surface shall be the contents of a square whose side is 10 metres, constituting the *mourabba*, or arc.

According to the 5th Article, the unit of capacity for liquids, and for corn, seeds, and similar dry substances, is to be a cube, having a decimetre for its side. This unit is to be called the *cull chek*, or litre.

Article 6 makes the cubic centimetre of distilled water, weighed in *vacuo* at the usual temperature and atmospheric pressure, the unit of weight, and gives the multiples and subdivisions, with their names in Turkish.

Article 7 ordains that a standard French kilogramme in platinum shall be deposited in the treasury of the Imperial palace.

Article 8 provides for the stamping of the scales, weights, and measures to be used under the new system in order to ensure their correctness.

Article 9 orders the exclusive use of the metric system in its entirety in all administrative departments of the empire

after the 1st of March, 1871, whether in buying or selling. Houses having contracts with the Ottoman Government will do well to note this article.

Article 10 states that the old system of weights and measures is optional until the 1st of March, 1874, except in the case of private contracts entered into *before* that time, but expiring *after* that date, in which case both the old and the new weights and measures should be mentioned. Merchants entering into contracts with Turkish houses after 1st March, 1871, will see the importance of attending to this provision. No doubt, according to the opinion of jurists here, if the provisions of this article are not complied with such contracts will be null and void. Of course, after the 1st of March, 1871, the new names and values can be used in such contracts without any allusion to the old system.

Article 11 makes the use of the metric system compulsory on every one after the 1st of March, 1874.

Article 12 announces the immediate publication of official tables for the conversion of the old weights and measures into the new, and *vice-versâ*.

Article 13 provides for the teaching of the new system in all schools and educational establishments.

Article 14 enacts that the present law will not apply to the weights used for specie or gold and silver.

Article 15 simply provides for the promulgation of the above enactments.

The adoption of the metric system by so conservative a nation as the Ottomans will not be an easy matter. The lower orders of the people hold to their ordinary customs as to a religious belief, and it will, no doubt, be a long time before the decimal system will be fully accepted by them.

The next thing that claims the attention of the Government of the Porte is the monetary system, which is rendered singularly confusing by the existence of a coin of nominally six piastres, which being in base metal is merely a token or metallic draught on the Turkish Government. The silver currency is fixed in its value, but the copper money changes in its worth according as the Turkish stocks rise and fall.

The *Grand Rue* of Pera, the Frank suburb of Constantinople, is full of pharmacists, who appear to drive a splendid trade in French patent medicines. I see many of the names of our English patentees about, so, as Turks, Greeks, Armenians, Italians, and French are all fond of buying medicines of every description, I think it is as well to direct the attention of your readers to this fact. But more of this anon. The principal establishment seems to be the *Pharmacie Britannique*, so called because only one of the assistants speaks English, and that almost unintelligibly. Prices seem to be high. They charged me at the rate of a shilling an ounce yesterday for some *creta præcip.* According to this rate black draught ought to be dearer than Imperial Tokay, and blue pills about the price of pearls of equal size.

I am sorry that none of your readers thought it worth while either to endorse or attack my opinions on the Metric and Decimal System. Possibly they think the chances of its introduction into pharmacy far too remote to take much notice of it. I have in preparation an article on the Drug Bazaars of Stamboul, which I hope will interest your readers, many of whom, I hope, will recognise the old initials,

C. W. Q.

The *Western Mail* says that the Government have decided to prosecute the father of the Welsh fasting girl at the forthcoming Carmarthenshire Assizes; and Mr. Giffard, Q.C., has received an intimation from the Attorney-General that he will be required to conduct the prosecution on behalf of the Crown.

Pharmaceutical Society of Great Britain.

EVENING MEETING, FEB. 4TH,*

MR. H. SUGDEN EVANS, PRESIDENT, IN THE CHAIR.

THE minutes of the preceding meeting having been read, and subsequent donations to the library and museum acknowledged, the adjourned discussion on Dr. Redwood's *Notes on the Pharmacopœia* was opened.

Mr. BLAND had feared that the discussion would suffer a premature collapse, and was glad to have an opportunity of giving expression to some of his thoughts on the subject. A large portion of the prescriptions passing through his hands were from the pens of medical men who were unacquainted with the British Pharmacopœia, and still continued to prescribe in accordance with the formulæ of the London Pharmacopœia. He was of opinion that medical men frequently thus ignored the British Pharmacopœia. In view of such facts, it seemed to Mr. Bland that the Medical Council were very stringent in respect to chemists and druggists. He considered the British Pharmacopœia an excellent work, though invested with a fictitious importance by the Medical Council, and frequently interfering with the satisfactory progress of the pharmacist's daily work. Referring to Dr. Redwood's hint that chemists and druggists should not depend on the Pharmacopœia in respect to the testing of articles, but rather on their own experience, Mr. Bland considered that adulteration amounting to only two or three places in decimals might be disregarded. Most pharmacists were compelled to depend on the chemical manufacturers, and be content with what they supplied, as it was impossible for the former to prepare all the necessary compounds. Mr. Bland wanted to know why Ammonia Alum had been introduced in the Pharmacopœia just when Potash Alum was again coming into the market; also whether the specification of Teroxide of Antimony was correct. He asked Dr. Redwood whether he thought that Chloroform prepared from methylated spirit ought to be confined to outward applications. He owned he was somewhat perplexed in respect to Compound Extract and Pill of Colocynth, as he could never tell whether the writer of a prescription meant the preparation of the London or British Pharmacopœia. Mr. Bland also said that the Pharmacopœia process for the preparation of Sulphate of Quinine was impracticable, though he had prepared some of the salt satisfactorily by adapting a modification of that process. With respect to the process for preparing Terechloride of Gold, he said that the quantity of acid ordered was too large, and he considered the process of rolling unnecessary.

Mr. MARTINDALE thought it would be advisable to blend Liquor Atropiæ with Liquor Atropiæ Sulphatis, and order only a Liquor Atropiæ formed after the model of Liquor Strychniæ—say by dissolving four grains of Atropia in one ounce of water with sufficient dilute sulphuric acid (a few minims) to form a neutral solution. Mr. Martindale also recommended the following modification of the method for preparing Mucilago Tragacanthæ. Put the gum in a bottle twice the necessary size, moisten with spirit, and then agitate with water; a perfect mucilage is formed almost immediately. He also repeated Mr. Piessio's suggestion, that the term *Otto* should be used to signify a volatile oil, in order to distinguish it from a fixed oil, which he would continue to designate *Oleum*.

Mr. HILLS pointed out the unnecessary pain which might be caused in adopting Mr. Martindale's suggestion in reference to Liquor Atropiæ, owing to a possible excess of acid.

* Reported specially for this journal.

Mr. HASELDEN expressed his opinion that the Pharmacopœia should be written in Latin, both because it would then be more easily read on the Continent, and because the ground was prepared for so doing by the instruction which the rising students were receiving. Mr. Haselden complained of the large amount of spirit ordered in the preparation of Ox-bile, and thought a much less quantity would suffice.

Dr. REDWOOD, in order to dispose of some of the questions raised at this and the preceding meeting of the Society, alluded briefly to those which had more especially struck him. He thought Mr. Martindale's suggestion in reference to Linimentum Potassii Iodidi cum Sapone—i.e., that the materials should be mixed at equal temperatures—worthy of attention. That the prescribed strength for Liquor Magnesiæ Carbonatis should be reduced there could be no doubt; the high amount of thirteen grains to the ounce was ordered because the compilers of the Pharmacopœia were anxious to conform with Dinneford's fluid, which was represented as containing so large an amount, and was advertised as the best. The representatives of that manufacture, however, now grumbled at what they themselves had initiated. Dr. Redwood then spoke of the difficulty the Medical Council had incurred in reconciling the three opposing interests, English, Scotch, and Irish, and the consequent necessity of suffering some inconveniences of such amalgamation, to a few instances of which he referred. In respect to Potash Alum, Dr. Redwood was not aware that it was again on the market. In compiling the Pharmacopœia, *chemical purity* had not been considered desirable. The description of Teroxide of Antimony was, in Dr. Redwood's opinion, correct. The British Pharmacopœia did not recognise the manufacture of Chloroform from methylated spirit; but in the Exhibition of 1862, many samples of Chloroform, both made from methylated spirit and rectified spirit, had been shown, and the Committee, of which Dr. Redwood was a member, had spent much time in ascertaining that no practical difference existed between the two articles; moreover, Methylated Chloroform was still made in commerce, perfectly fit for medical use. Dr. Redwood knew of no objection to the process for the preparation of Sulphate of Quinine; it was, of course, a subject replete with difficulty. The Medical Council simply wished to give a general indication. Of course, too much acid was ordered in the directions for the preparation of Terechloride of Gold; still the compound could be made by the process indicated. He considered Mr. Martindale's suggestions of peculiar value, especially that in reference to Tragacanth. Of the want of uniformity complained of by Mr. Haselden, he acknowledged the truth, still no practical difficulty was involved. It was difficult to say whether pure Atropia should be used in the preparation of Emplastrum Belladonnæ. Dr. Redwood would give an opinion in reference to the relative value of definite and indefinite agents at some future time.

The discussion was adjourned to the next meeting of the Society.

MEETING OF THE COUNCIL,

January 5th, 1870.*

MR. H. SUGDEN EVANS, PRESIDENT, IN THE CHAIR.

MR. HASELDEN, VICE-PRESIDENT.

Present—Messrs. Abraham, Bottle, Bourdas, Carteighe, Dymond, Edwards, Hills, Morson, Savage, Squire, Stoddart, and Williams.

The minutes of the last meeting were read and confirmed. The Report of the Finance and House Committee was presented, showing on the General Fund Account a balance

in the Treasurer's hands of £950 3s. 1d., and on the Benevolent Fund Account a balance of £421 15s. 4d.; and submitting for payment accounts, and various items, amounting to £965 18s. 4d.

Resolved—That the Report be received and adopted, and payments made.

Messrs. Taylor and Co.'s estimate for printing the Calendar for 1870 was accepted.

The House and Finance Committee further reported that they had examined the applications and testimonials for the office of Collector, and had recommended the names of three persons for the consideration of the Council. Ballot having been taken, the President declared Mr. Laneelot Steele Hughes elected.

The Secretary reported that he had submitted to the Privy Council for their approval, the resolution passed at the last meeting of the Council, December 1st, in reference to the addition to the schedule of poisons, and that he had received the following reply:—

“Medical Department of the Privy Council,
16th December, 1869.

“Sir,—In answer to your letter of the 6th inst., submitting, for the approval of the Lords of Her Majesty's Council, a resolution, passed at a meeting of the Council of the Pharmaceutical Society on the 1st inst., declaring, in accordance with Section 2 of the Pharmacy Act, 1868, that certain articles therein named ought to be deemed poisons within the meaning of the Act, I am now directed by their lordships to inform you that they approve the resolution.

“I am, sir, your obedient servant,

“JOHN SIMON.

“To the Secretary of the Pharmaceutical Society.”

The Secretary further reported that the said resolution and approval had been put in legal form, and had been advertised in the *London Gazette* of Tuesday, 21st December, 1869.

It was moved by Mr. Abraham, seconded by Mr. Savage,

Resolved—That the Parliamentary Committee be requested to draw up in a tabular form the laws regulating the sale of poisons, with a view to their being printed and circulated. [See Regulations appended to this Report.]

On the report of the Special Committee, with reference to the practice of pharmacy in Ireland, it was

Resolved—That it is desirable that pharmaceutical chemists should be entitled to practise pharmacy in Ireland.

The Report of the Library, Museum, and Laboratory Committee was read and received.

Tenders for certain works required to be done in providing extra accommodation connected with the Secretary's office were received and considered;

Resolved—That Messrs. Patman and Fotheringham's estimate be accepted, and that they be authorized to proceed with the work forthwith.

The Registrar reported as follows:—

Members, being Pharmaceutical Chemists.

Number of Members on Dec. 31, 1868	...	...	1,739
„ restored in 1869	...	...	38
„ elected „	...	...	88
			1,865

Deaths, seceders, etc.:—

Deaths, 41; Retired (out of business), 15; Resigned (still in business), 4; Medial, 4; Not to be found, 1; on Benevolent Fund, 2; Defaulters, 15

82

1,783

Members, being Chemists and Druggists.

Number of Members elected in 1869 (first year) ... 403

Total number of Members (subscribing) Dec. 31, 1869 2,186

Associates in Business.

22.

Associates—Major and Minor			Apprentices.		
1869.	1868.	Increase.	1869.	1868.	Increase.
281	177	112	499	280	219

* From the *Pharmaceutical Journal*.

The Board of Examiners for England and Wales reported that they had, during the month of December, examined—

5 candidates	Major,	and passed ...	...	4
14	Minor,	"	...	66
105	Preliminary,	"	...	6
				—
124				76

And that three certificates of other examining bodies had been accepted in lieu of the Preliminary Examination.

REGULATIONS REQUIRED BY THE PHARMACY ACT, 1868, TO BE OBSERVED IN SELLING BY RETAIL, AND IN DISPENSING POISONS.

All the articles named or referred to in the appended list, both in Part 1 and Part 2, are Poisons within the meaning of the Pharmacy Act, 1868.

SALE BY RETAIL.

I.—Relating to Part 1 and Part 2 of the List.

It is unlawful to sell any "Poison" by retail, unless the vessel, wrapper, or cover in which it is contained, be distinctly labelled with the name of the article, the word "Poison," and the name and address of the seller. This applies to all the articles in both parts of the list.

II.—Relating to Part 1 only.

It is unlawful to sell by retail any poison included in Part 1 of the list, to any person unknown to the seller, unless introduced by some person known to the seller; and on every sale of any such article, the seller shall, before delivery, make, or cause to be made, an entry in a book to be kept for that purpose, of

1. The date of the sale;
2. The name and address of the purchaser;
3. The name and quantity of the article sold; and
4. The purpose for which it is stated to be required;

to which the signature of the purchaser, and of the person, if any, who introduced him shall be affixed. The article must also be labelled with the name of the article, the word "Poison," and the name and address of the seller.

III.—Relating only to Arsenic and its Preparations.

It is unlawful to sell arsenic or any of its preparations, unless, in addition to all the foregoing regulations, the following provisions of the Arsenic Act be also observed:—

1. That the poison, if colourless, be mixed with soot or indigo, so as to colour it.
2. That the person to whom the poison is sold or delivered be of mature age.
3. That the occupation, as well as the name and address, of the purchaser be entered in the poison-book.
4. That when the purchaser is not known to the seller, and is introduced by some person known to both, this person shall be present as a witness of the transaction, and shall enter his name and address in the poison-book.

DISPENSING.

None of the foregoing regulations apply to any article when forming part of the ingredients of any medicine dispensed by a registered chemist and druggist; but it is necessary, if a medicine contain a poison included in Part 1 or Part 2 of the list, that the ingredients of the medicine, together with the name of the person to whom it is sold or delivered, be entered in a book kept for that purpose (prescription book), and that the name and address of the seller be attached to the medicine.

LIST OF POISONS WITHIN THE MEANING OF THE ACT.

PART 1.

Not to be sold unless the purchaser is known to or is introduced by some person known to the seller; also, entry to be made in poison-book of—
1. Date of Sale; 2. Name and Address of Purchaser; 3. Name and Quantity of Article; 4. Purpose for which it is wanted; attested by signature; and must be labelled with—1. Name of Article; 2. The word "Poison;" 3. Name and Address of Seller.

Arsenic and its Preparations. (For special regulations see the foregoing);
Aconite, and its Preparations;
Alkaloids:—All poisonous vegetable alkaloids and their salts.
Atropine, and its Preparations;
Cantharides;
Corrosive Sublimato;
Cyanide of Potassium, and all Metallic Cyanides and their Preparations.
Emetic Tartar;
Ergot of Rye, and its Preparations;
Prussic Acid, and its Preparations;
Savin, and its Oil;
Strychnine, and its Preparations.

PART II.

Almonds, Essential Oil of (unless deprived of Prussic Acid);
Belladonna, and its Preparations;
Cantharides, Tincture and all Vesicating Liquid Preparations of;
Chloroform;
Corrosive Sublimato, Preparations of;
Morphia, Preparations of;
Opium, and its Preparations, and Preparations of Poppies;
Oxalic Acid;
Precipitate, Red (Red Oxide of Mercury);
Precipitate, White (Ammoniated Mercury);
Vermin Killers. (Every compound containing a "poison," and sold for the destruction of vermin.)

Must be labelled with—1. Name of article; 2. The word "Poison;" 3. Name and Address of Seller.

Abstracts of Foreign Papers.

THE PERCOLATION OF FLUID EXTRACTS.

IN the *American Journal of Pharmacy* for January, Mr. CAMPBELL gives further particulars respecting his method of percolation for fluid extracts. The recorded experiments appear to show that the fine powder so stringently enforced, and which, according to Mr. Campbell, is only a means of confining the manufacture of extracts to wholesale dealers, is unnecessary. He finds that a powder known as moderately coarse, and prepared by grinding twice alternately through a drug mill, and sieving, and then contusing in a pestle and mortar until the whole will pass through No. 40 sieve, is all that is necessary to enable exhaustion of the drug to be effected within 1 per cent. The proper menstruum is used in the proportion of 16 fluid ounces to 16 troy ounces of the powder; the powder is damped with from 4 to 6 ounces of the menstruum, and then packed in the percolator, in the neck of which a piece of sponge has been placed. The surface of the drug is covered with a disc of paper, and the remaining 10 or 12 ounces of menstruum poured on and allowed to be slowly absorbed, or percolate through the packed drug. When the sponge becomes moist, a cork is fitted in the neck of the funnel, and the whole allowed to macerate four days. The cork is then removed, and displacement effected with the use of a fluid corresponding to the menstruum, minus glycerine. When 16 fluid ounces have been obtained the process is finished, and although for great accuracy, 18 fluid ounces may be percolated, and reduced by spontaneous evaporation, still Mr. Campbell is satisfied that when the process is carefully conducted and not hurried through, the first 16 ounces constitute an extract almost, in fact, quite as near to perfection as it can possibly be made. Glycerine, which enters into the composition of the menstruum, is suggested as an invaluable agent and addition for dissolving out the active matter of drugs, also for its superiority over sugar in preventing the deposition of a portion of the active soluble matter that occurs in almost all of the fluid extracts. By the above method the pharmacist may prepare as small a quantity as 4 ounces, or as large a quantity as desired. The menstruum varies with different drugs. The author gives a list of about 70 substances that he has experimented on, and particulars of the menstruum used, which was in some cases composed of alcohol and glycerine; in others of alcohol, glycerine, and water; and in others of water and glycerine.

LIQUOR OPII COMPOSITUS.

Dr. E. R. SQUIBB makes *Liquor Opii Comp.* the subject of a long communication to the *American Journal of Pharmacy*. The increase in the demand for this preparation, and the probability that many pharmacists make it for themselves, has induced him to undertake a revision of the formula, in

order to remove certain objections to the existing one, which appear to have been established on good grounds. The two objections in the formula are: First, that the odour and taste of ether is objectionable; second, that when the compound solution of opium is kept for a long time in a bottle only partially full, it gradually loses the odour of ether, and assumes that of acetic ether. The author meets the objection to its complicated character with the simple remark that the best results are not often obtainable without commensurate skill and labour. Having reached the conclusion that the acetic ether spontaneously generated was an improvement upon that which it replaced, that it has a pleasant stimulant effect, and that its odour and taste are refreshing and agreeable to a large majority of people, and, finally, that if medicinal at all, it is so to nervous susceptible persons, modifying favourably the disagreeable effects of opiates, the author now introduces a small proportion of acetic ether and purified chloroform, instead of the compound spirit of ether, the chloroform controlling the after effects of the opium; the quantity of chloroform introduced amounting to 1 minim in the maximum dose of 30 minims of the finished preparation. The whole formula is as follows:—

Assayed Solution of Opium (equal to one-third of a grain of sulphate of morphia)...	14 minims.
Strong Alcohol	13 „
Purified Chloroform	1 „
Acetic Ether, sp. gr., 0.880	2 „
Maximum dose	30 „

Dr. Squibb then explains in full detail his method of obtaining the assayed solution of opium, and of preparing *Liquor Opii Compositus* of the above composition.

STRYCHNINE AN ANTIDOTE TO CHLORAL.

M. LIEBREICH, of Berlin, has made experiments on rabbits, which adds somewhat to our knowledge of the effects of chloral. Taking three rabbits of equal strength, he injected respectively 2 grammes of chloral in four quantities under the skin of the back of the first; 15 centigrammes of strychnine at once under the skin of the second; and in the third, 2 grammes of chloral in the same manner as the first, but with injection of 15 centigrammes of strychnine immediately the effects of the chloral became manifest. The first rabbit died in about half-an-hour; the second in twelve minutes; while the third, which had received a dose of chloral of fatal consequence to the first, and a dose of strychnine equally fatal to the second, was able in an hour and a half to rise, walk, and eat as though nothing had happened.

ALKALINE CANTHARIDATES AND THEIR APPLICATION.

MM. DELPECH and GUICHARD communicate an interesting article on the alkaline cantharidates and their application as blistering agents, to the *Bulletin Thérapeutique*. The authors condemn the vesicating-plaster of the Paris Codex for the following reasons:—The quantity of cantharidin contained therein is variable, in some cases there is none at all, owing to the use of very old cantharides; the fatty matter present which dissolves the cantharidin causes the medicament to run over the skin, and thus extends the action beyond the limits imposed by the medical man; moreover, the cantharidin is by this means sometimes introduced into the system in spite of the measures which may be taken to prevent it; lastly, in the opinion of the authors, the resins present are irritating, and have an odour almost unsupportable to some persons. To obtain a good blister they think that the fat and resin should be eliminated, and a known quantity of cantharidin introduced, so as to obtain a plaster

which shall produce a definite effect. The easy volubility of cantharidin itself renders it unfit to be used in the separate state for this purpose, therefore, the authors instituted experiments in reference to the compounds of cantharidin described by Massing and Draggendorff in 1867. The results of these experiments led them to adopt cantharidate of potassa, a salt of the hypothetical acid $C_{10}H_6O_4 \cdot 2HO$ ($O=8$), of which cantharidin $C_{10}H_6O_4$ is the anhydride; 98 parts of cantharidin give 163 parts of cantharidate of potassa. This salt is insoluble in chloroform and ether, is soluble in about 11 parts of boiling water, in 24 of cold water, in 110 of boiling alcohol, and is nearly insoluble in cold alcohol. Taking advantage of its slight solubility in cold alcohol, MM. Delpech and Guichard prepare the salt by dissolving 2 grammes of cantharidin in 150 grammes of alcohol slightly warmed, and adding 1.60 grammes of caustic potassa dissolved in a very little distilled water; the mixture immediately solidifies and the alcohol is separated by pressure and filtration. The plaster is prepared by spreading the following composition on thin sheets of gutta-percha, so that each square decimetre shall contain one centigramme of cantharidate of potassa:—

Gelatine	2 grammes.
Water... ..	10 „
Alcohol	10 „
Cantharidate of Potassa	20 centigrammes.
Glycerino	Q. s.

These blisters should be slightly moistened with water before application; they gave the best of results in the hands of a number of medical men enumerated by the authors.

SIDNEY W. RICH.

Therapeutics.

ATROPIA AN ANTIDOTE TO THE POISONOUS ACTION OF PHYSOSTIGMA.

IN the *Practitioner* for the present month, Dr. T. R. FRASER, F.R.S.E., calls attention to some results of an investigation commenced by him in 1868, and still unfinished. The facts obtained demonstrate that in certain animals at least, the lethal action of physostigma may be prevented in a remarkable and perfect manner by the physiological action of atropia. By a series of experiments on rabbits and dogs, conducted in a manner that admitted no doubt as to the interpretation of the results, the author has proved that the lethal effects of doses of physostigma greatly in excess of the minimum fatal dose may be prevented by doses of atropia greatly below the minimum fatal dose. It may be said that such a demonstration, being made in the lower animals, does not admit of application to man. In reply, the author would urge that the actions of physostigma and atropia are precisely the same in man, and dogs and rabbits. Atropia has never yet been employed in man as an antidote to poisoning by physostigma, but the evidence that the author has adduced of its antidotal power is of the most satisfactory nature. He says that in treating cases of poisoning by physostigma in man, the sulphate of atropia should be given by subcutaneous injection in doses of from the one-fiftieth to the one-thirtieth of a grain. The exhibition of the antidote should be persevered with, in repeated doses, until the pupils are fully dilated and the pulse-rate increased, and probably also, until the hypersecretion of bronchial mucus, which greatly impedes respiration, is completely checked.

THERAPEUTIC INVESTIGATION.

THE editor of the *Practitioner*, Dr. ANSTIE, in a note to a communication respecting the doctrine of *similia similibus*,

says, in the spirit of a scientific investigator :—"The principle of therapeutic investigation which we uphold is clear enough. Let us confine our *scientific experiments* to the case of those diseases whose pathology is most intimately known; and then let us select our experimental agent, *not* because poisonous doses of it can cause such and such symptoms in the healthy subject—a fact, which taken alone, is utterly irrelevant—but because our knowledge of its chemical and physical properties leads us to suppose that it will supply some element, either of material or force, which is obviously deficient. And in the case of the emergencies of practice, where we must act, sometimes without any scientific knowledge of the *essential nature* of the effect we ought to produce, let us be frankly empirical, and not confuse ourselves with theories whether homœopathic or allopathic."

QUININE IN ACUTE LUMBAGO.

DR. J. G. GLOVER, in the *Lancet*, gives the results of his experience of the treatment of very acute cases of lumbago in which the urine is clear. He holds that there is a strong neurotic or neuralgic element in such cases, and that the proper remedy is quinine, in two-grain doses, every four or six hours. He has verified this opinion in several very acute cases, in which alkaline mixtures, opiates at night, opiate liniments, and other soothing local applications entirely failed.

CHLORAL HYDRATE IN WHOOPING-COUGH.

MR. A. M. ADAMS, in the same journal, states that he has been treating several cases of whooping-cough very successfully with small doses of chloral hydrate, the new agent which is now receiving so much attention. He finds that with children of about six years old, five grains given two or three times daily, in a little syrup and water, will usually mitigate the severity of the paroxysms. As often happens, if the cough is not very distressing during the day, but increases in violence after the child is put to bed, then about six grains given only at bedtime will in most cases ensure a comparatively quiet night. Such doses do not seem to produce drowsiness, nor any bad effect whatever. Mr. Adams has been using it in his own family and elsewhere, and is satisfied that, where the cough is unusually severe, and likely in consequence to lead to other complications, it will prove a most invaluable remedy. He has also been using the solution of peroxide of hydrogen in this complaint, as recommended by Dr. Richardson, and finds it likewise a good and safe sedative, but not nearly so efficacious in severe cases as the hydrate of chloral. In some of his cases he has been giving the solution during the day, and a dose of chloral at bedtime, with marked benefit.

Veterinary Notes.

BY W. HUNTING, M.R.C.V.S.

MUD FEVER.

THIS name is given to a disorder not uncommon in wet weather. In addition to simple febrile symptoms we have an eruption on the skin of the legs and belly; in fact, on those parts most exposed to the splashing of the mud. The eruption is doubtless due to the irritation of the mud, but the slight fever symptoms may be looked on as a coincidence. We have lots of cases of fever in wet weather, and many horses present an irritated skin, yet these receive no specific name. It is only when by chance they both occur together, that stable wisdom diagnoses mud fever.

Exposure to wet weather accounts for the fever, and bad grooming is partly responsible for the state of the skin,

though, I must add, the eye-pleasing practice of close-clipping robs an animal of its protection against wet and dirt, and thus acts as a predisposing cause.

The belly-band and martingale, by friction on an already irritated surface, may cause local swellings, and thus produce a somewhat formidable looking case; these effects soon pass off on removal of the cause.

The treatment is simple.—Have the animal thoroughly cleaned, and should the febrile symptoms be marked, give

Sp. Ether Nit. } of each ʒj.
Liq. Ammon. Acet. dil. }

and repeat, if necessary, in twelve hours.

A little diuretic medicine helps to disperse any swelling. The following ball may be given :—

Potas. Nit. } of each ʒii.
Resinæ Pulo. }

made up with linseed meal and soft soap, and continued every day for a week.

Exercise must not be neglected.

CRACKED HEELS.

Like mud fever, this annoyance is prevalent in wet weather. The stupid practice of trimming horses heels, and careless grooming predispose to an attack; but in conjunction with two or three other minor affections, we find a certain class of horses most liable to its advent. Low bred horses with round shanks are most liable to thrushes, cracked heels, and cracks at the back of the knee and front of the hock. These cracks of hock, knee, and heel—for they are all analagous—vary from a small split to a large wound, accompanied by swelling of the leg, and lameness.

A mild case will readily yield to an astringent and stimulant ointment of either carbonate or oxide of zinc. A bad case with swelling and suppuration will require warm fomentations, or a poultice, for a night, after which I find great benefit from a solution of sulphate of zinc—half a drachm to the ounce—with a few drops of carbolic acid. When, by this application, the sore appears pretty dry, I revert to the zinc ointment. If too bad to work, a loose box and dose of physic are advisable; in any case a few diuretic balls assist in the cure.

RINGWORM

is occasionally seen affecting horses, but more frequently cows. There may be one or more affected spots, each presenting a similar appearance, being circular, almost denuded of hair, and varying in size up to that of a crown piece.

It is a parasitic disease, but has this peculiarity, that it does not depend upon a minute animal on the skin, but upon a vegetable product in the substance of the skin.

I have only had the opportunity of trying two agents for its cure—Ung. Hydrarg. and Ung. Hydrarg. Biniodide, with such success as to warrant me in recommending the latter as a specific. A small portion of the ointment must be rubbed into and round the spot; one application is generally enough.

I have not tried Carbolic Acid, but should expect it to be a useful agent.

Speaking of Carbolic Acid, I would remark that it is very strange that such poisonous agents as Mercury and Arsenic should still be used as parasiticides when this acid, diluted for that purpose, is practically harmless, and unsurpassed in the certainty of its action.

By the death of Mr. S. Bailey, a Sheffield banker, and a man of considerable reputation as a philosophical writer, the Sheffield Infirmary receives a legacy of £2,000, the Sheffield Hospital and Dispensary £1,000, and the Literary and Philosophical Society £1,000.

Dentistry.

MANIPULATION OF PLASTER OF PARIS.

MR. JAMES W. WHITE, in a communication to the *Dental Cosmos* (Philadelphia) writes:—

Complaints are frequently made of unsatisfactory results in the manipulation of plaster of Paris, many of which are doubtless due to a failure to observe some necessary precautions.

Plaster should always be kept in a dry place—never in a cellar—and in winter time in a warm room. It will not work satisfactorily if cold, nor if mixed with cold water. Premising that the article is good, the observance of the following directions should insure success:—Put the required quantity of tepid water into the mixing vessel, and add the plaster gradually, stirring constantly, until the proper consistency is obtained. If too thin, it will not set as quickly. If for taking impressions, it should be quite thick, and the addition of a small pinch of salt will facilitate the setting, but the cast will not be quite as hard.

GUILLOIS' CEMENT.

In a recent number of the *Journal of Dental Science*, Mr. CHARLES JAMES FOX, M.R.C.S., thus refers to this cement:—It is of the same nature as that commonly called osteoplastic, but it differs from it in this particular, that it can be mixed to a consistence much resembling putty, and in that state can be manipulated for some minutes without setting irretrievably. If you mix the other osteoplastics as thick as this, they set rapidly or crumble; if you use them in a thinner condition, they run about on the gums and teeth. When once set, it is so hard—if it has been properly manipulated—as to turn the edge of the instrument, should it be deemed requisite to remove it. As to its durability, it is, of course, impossible to say much, seeing that it has only been introduced into England for a few months; but this much may be said, that, taking four months' experience with other cements, and four months' with this, I have found it so superior that I have entirely discarded all other osteoplastics, amalgams, etc. In small cavities in the incisors, or in shallow cavities where osteoplastics would wash out in a short time and dissolve away, Guillois' cement remains at the end of four months as good as when it was put in. I cannot tell what further experience may prove, but so far, and only for four months' experience do I speak, I have not had one failure, which is more than I can say of any other.

MENDING CASTS.

An American dentist recommends collodion for mending casts. The parts to be joined must be wiped dry; both the surfaces are then well wetted with the collodion, placed quickly together, and held thus for a brief space of time. Casts may be advantageously coated with collodion as soon as they are taken from the impressions.

A PLEA FOR CHILDREN.

Under this title Dr. J. McMANUS communicates to the *Dental Cosmos* for January a thoughtful article, from which we extract the following passage:—I have known instances where children have shown "Spartan-like heroism" during one operation who could neither be coaxed nor driven to visit a dentist again for years. Very many skillful manipulators seem to forget that children require the same care and attention that is demanded by older patrons; that a pleasant conversational manner will be quite as keenly appreciated by them, and do as much toward gaining their confidence and esteem, as a like course does with those of mature years. They too often forget that greater care and

delicacy of manipulation are required when operating on the teeth of young children; and in their efforts to make first class operations, they attempt to do too much. Within the year, I finished the twentieth gold filling for a young patient. At twelve years of age, she was brought to a very superior operator; with as little delay as possible, he commenced operations on the superior left central and lateral incisors, made a separation, and partially prepared one cavity for a filling, when the child rebelled, got out of the chair, and despite her friends, left the office, and for four years all efforts of kind friends and wishes of parents could not prevail on her to allow anyone to operate on those teeth again. As she grew older, and began to realize how badly her teeth appeared, she summoned courage to make another attempt, and, after a number of sittings, I succeeded in putting her teeth into passable condition. I found four of the molars decayed away, leaving only the roots in a straggling condition, the superior left lateral incisor with dead pulp, large contour fillings required in the central and lateral, and in the remaining teeth fillings above twenty. In my opinion the greater part of this might have been averted, had the operator first consulted been a little more considerate and judicious in his treatment of the child at the first sitting.

Homœopathy.

THE HOMŒOPATHIC PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

THIS Society is a young but vigorous imitation of the far more ancient and dignified establishment in Bloomsbury-square. We shall try in future to offer our readers notes of the meetings, whenever matters of interest are brought forward. The Society is little more than year old. It was called into being at the time when homœopathy was threatened, or appeared to be threatened, with vexatious legislative interference, through the passing of the Pharmacy Act. Our readers will remember that after some rather exciting discussions, it was resolved that homœopathic chemists should not worry themselves about the provisions of an Act which at least was not intended to interfere with them, and that they would await a prosecution, and not challenge one. Since then the question has been, as we may consider, settled by the counsel's opinion obtained by the Pharmaceutical Society, to the effect that the clauses alluding to poisons did not refer to preparations which in themselves could not be considered poisonous. The inaugural address of the new session was delivered on December 21st, 1869, by the president, Mr. Ross (Leath and Ross). The sentences which follow, extracted from this address, while they fairly represent the general tone of argument adopted by homœopaths, manifest also such an admirable spirit of candour, that for this reason we are glad to transfer them to our columns, and recommend them to the notice of some of those who in a less civil manner maintain the opposite opinions. In the course of his address, Mr. Ross said:—

We have a mission; and it is this, so to improve Homœopathic Pharmacy, that it shall command the respect and admiration of every intelligent inquirer. Homœopathic chemists have the credit of using great care in the preparation of their medicines, and the public have confidence in them to this extent—let us see to it, that we endeavour by all that lies in our power to retain, and to deserve, this confidence.

The Homœopathic principle, *similia similibus curantur*, notwithstanding the theoretical subtilties with which it has been attacked, is more and more confirmed by daily experience; and may now be considered as all but incontrovertible. The treatment of disease has acquired by the application of this principle a greater degree of certainty, and a greater uniformity in the practice of physicians is nowhere to be found, than amongst Homœopathic practitioners. The Homœopathic method, far from having arrived at perfection, must look for improvement to the further cultivation of science, and we, as chemists, cannot afford to ignore altogether the science of chemistry, or the discoveries of modern times. We have, perhaps, in the past, had a tendency to regard ourselves

as mere dilutionists, mere dividers and subdividers of matter, and have not considered how much our system of Pharmacy might have been improved, by carefully examining the various discoveries which have arrested the attention of the chemists of the Allopathic school.

HOMEOPATHY IN SOUTHAMPTON.

In consequence of our remarks under this heading last month, wherein we had occasion to refer to Dr. Griffin as one of the chief opponents of the appointment to the Dispensary of that town of a homœopathic physician, we have received from that gentleman a copy of a pamphlet written by him in the form of a letter addressed to the president of the Dispensary. Dr. Griffin, who is an uncompromising hater of everything homœopathic, has maintained his opinions with a considerable amount of energy, and we are bound to add, with such good humour as we were hardly prepared to expect from him, judging from the report on which our remarks were founded. We can heartily recommend the pamphlet to our homœopathic readers; we know most of them are good-tempered, and they are so accustomed to ridicule and abuse of their system, that the most surly among them will be amused with the doctor's sparkling "chaff;" though Dr. Griffin himself must admit that if that tone of discussion might be regarded as a fair substitute for calm investigation, there would be nothing left of any system of medicine whatever. To produce contradictory authorities and individual absurdities of practice is as easy for one side as for the other, and only proves that the so-called science of medicine is still so open that there is room for almost any theory which man's ingenuity can devise. Homœopaths, too, might fairly complain that Dr. Griffin should have so peremptorily refused to hear Dr. Cooper's own explanation of homœopathic principles, and yet should have argued against a system which he calls homœopathy, but which in its entirety would be repudiated by nine-tenths of its modern professors. The following anecdote from the pages of the pamphlet we have referred to, although we cannot see how it affects the argument, is too good to be forgotten. It originates in America. A doctor is called in to see a child. "This hyar little cuss has small-pox," says he. "Now I ain't posted up in pustules, so I must approach the case by circular treatment. I'll give him fits, and then I'll cure him, for I am a stunner at fits!"

Photography.

HOW TO MAKE RIPE COLLODION AT ONCE.

THE following article, contributed by Mr. ALFRED HUGHES to the *Year Book of Photography*, cannot fail to interest many of our readers:—

It is very generally known, I believe, that if ether be left in contact with the atmosphere through the bottle stopper flying out, or from other causes, the ether becomes practically unfit for photographic use. The collodion made from it, becoming intensely red, gives thin, hard, wiry images, all roundness, richness, and bloom being lost.

Some little time ago I had some ether (a Winchester quart full), the bottle stopper of which had been out from Saturday till Monday.

At that time I was experimenting with iodides and bromides, and accidentally found out the following way of using up acidified ether:—

With the ether above described I made collodion, and, taking twenty ounces, iodised it as follows:—

Iodide ammonium	...	4 grains	} per ounce.
Bromide ammonium	...	1½ "	

The collodion immediately turned a deep brown, and remained so, giving hard images, and having the appearance of a very old sample.

Twenty ounces more plain collodion were taken, and iodised as follows:—

Iodide cadmium	...	...	...	4 grains.
Bromide cadmium	...	...	...	2 "

This collodion remained quite colourless. Knowing that if this had been made with pure ether, about ten or twelve months' rest would have been needed for it to ripen, and thinking that the acid in the exposed ether might have the effect of time, I allowed the collodion two days' rest, and tried it. It fogged slightly. It was put aside again. In ten days it was clean, gave beautiful negatives (better than those produced by a similarly iodised collodion made of pure ether), and kept for nine months.

Wishing to test this result a little more, I made another collodion, iodised as follows:—

Iodide of ammonium	...	...	...	4 grains.
Bromide of cadmium	...	...	...	2 "

I mixed the bases as above, so as to get by the ammonium a collodion to work on the instant, and by the cadmium one that would also keep.

The collodion was tried at once. It worked exceedingly well, but in about a week it became hard, slow, and as useless as that which was made with ammonium alone.

So I concluded that to use acidified ether, cadmium salts alone must be used; and that for ammonium salts, the greatest care must be taken to have the ether as pure as possible.

I have written the above simply as a note of experience, there being, I think, only one practical result; that is, a hint how to rapidly make a ripe cadmium collodion.

REMOVING STAINS FROM THE HANDS.

M. FORTIN, referring to the use of cyanide of potassium, and of iodide of potassium, and iodine for this purpose, the author says the first endangers health, and even imperils life; the second is very expensive. The author recommends, instead, to wash the hands with a concentrated solution of either sulphate or chloride of zinc, to which some acid is added at the same time. The deepest and blackest stains should be touched with metallic zinc, whereby the reduction of the oxide of silver or that of the gallate of iron is promoted, and all metallic stains adhering to, or penetrating in the skin removed. Since most of the salts of zinc are colourless, and soluble in water, the hands become soon quite clean. They should then be washed, first with pure water, and next with soap and water.

Our Portrait Gallery.

HENRY SUGDEN EVANS, F.C.S.,

PRESIDENT OF THE PHARMACEUTICAL SOCIETY OF
GREAT BRITAIN.

THE election of Mr. Henry Sugden Evans to the Presidency of the Pharmaceutical Society in 1869 was generally regarded as a manifestation of the "universal fitness of things." By Act of Parliament the importance of the Pharmaceutical system had been vastly augmented, and the era of compulsory examination was appropriately marked by the election of a gentleman who had passed through the curriculum of the Society.

The following sketch of the career of the examined President will prove that he is eminently qualified to represent the great pharmaceutical body:—

Mr. Evans has reached his fortieth year, having been born in 1830 at Islington, Middlesex. His early infancy was passed within the precincts of St. Bartholomew the Great and in Liverpool, where, soon after his birth, the

house now known by the style of Evans, Sons, and Co., was founded by his father as a branch of the London wholesale drug house. In 1841, young Evans entered Merchant Taylors' School, where in dingy Suffolk-lane he sucked classic lore from the bosom of an Alma Mater owned with pride by many ripe scholars of the present and past ages. Sir Charles Bright, Dr. Pavy, and others now known to fame, were among his schoolmates.

In 1845, he commenced his apprenticeship to real life in his father's establishment in Bartholomew-close. While here, the study of Thomson's *Dispensatory* profitably occupied his leisure, and laid the foundation of his pharmaceutical knowledge. After practically going through every department in the London and Liverpool establishments, in October, 1847, he was sent to the School in Bloomsbury-square for a term of ten months, in accordance with the desire of the late Mr. Thomas Herring. His classical examination was conducted by Mr. Henry Deane, who has so long been an enthusiastic promoter of pharmaceutical education. Having become a Registered Apprentice of the Society, Mr. Evans began to take a lively interest in its operations and success. Among his contemporaries in the Laboratory were Messrs. Giles, Braithwaite, Pochin, Gale, Bird, and T. Savory, and for a while, Dr. Langdon Down, Dr. J. Baker Edwards, Messrs. Allchin and Groves.

We have heard Mr. Evans allude to the benefit he derived from the weekly meetings of students, which were then held every Saturday, for the discussion of scientific subjects, and we think with him that the abandonment of these meetings is an educational loss. We have also heard him speak of the enthusiasm which was communicated to the students by Allchin and Edwards, the Laboratory Assistants.

In July, 1848, Mr. Evans passed the Minor Examination, and in the November following, he passed the Major. Having thus secured the title of "Pharmaceutical Chemist," he went to Liverpool, to establish and take charge of Drug Mills and Laboratories in connection with the house there. In September, 1848, he published his first paper, which was on the "Preparation of Anhydrous Sulphuric Acid" (*Pharmaceutical Journal*, vol. viii., p. 127).

In June, 1849, he made a short communication to the Chemical Society on "Chromate of Copper," and at the November meeting he was elected a Fellow. In this year Jacob Bell went to Liverpool, and the result of his visit was the formation of the Liverpool Chemists' Association. Mr. Evans soon distinguished himself by his activity in this society. In April, 1850, he read a paper on the "Elementary Organs of Plants," and soon afterwards he gave a course of four lectures on "Chemical Affinity."

In 1853, he assisted in founding the Liverpool Natural History and Microscopical Society. During this and the succeeding year, he read a series of papers on the "Application of Histology to Pharmacy," and many of the results recorded are quoted by the editors of the recent edition of Pereira's *Materia Medica*.

In 1857, he was elected President of the Liverpool Chemists' Association, and this office he held for two years. In 1860, he was elected on the Council of the Pharmaceutical Society of Great Britain.

In 1862, he went to Canada, with a view to ascertain the condition of Pharmacy there, and four years later, he again visited this colony, and, in conjunction with Mr. N. Mercer, he established in Montreal another branch of the old house in Bartholomew-close, under the style of Evans, Mercer, and Co.

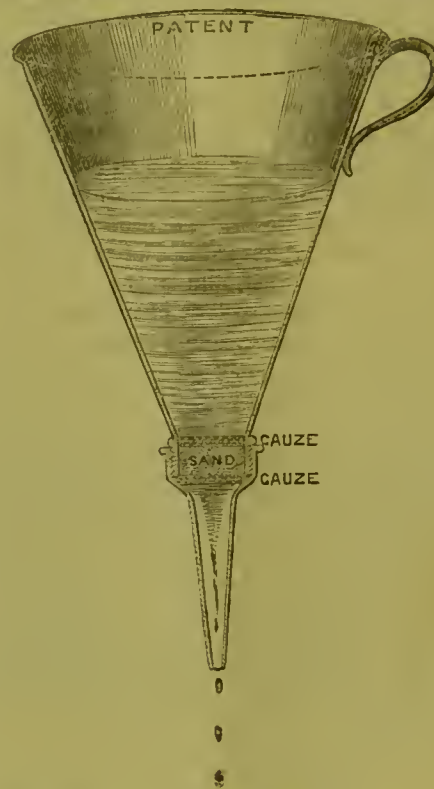
In 1868, Mr. Evans was elected Vice-President, and in 1869, President of the Pharmaceutical Society. Mr. Sand-

ford had finished his great work, and Mr. Evans was naturally selected to fill his place. Soon after his election, he attended the International Congress at Vienna with Dr. Redwood, and proved himself a worthy representative of the scientific pharmacists of Great Britain.



NEW FILTER FUNNELS.

THE object of this funnel is distinctly shown in the engraving herewith. Its usefulness will strike all pharmacists, but we may suggest one point in its favour which occurred to us first of all. Chemists not unfrequently



set on some liquid to filter over night which passes very slowly, but when they come to look at it in the morning they find that all has gone through, including the sediment. With this filter funnel no such annoyance can be apprehended. Messrs. John Bailey, of the Albion Works, Salford, are the manufacturers.

GABRIEL'S TOOTH PREPARATIONS.

MESSRS. GABRIEL, the eminent dentists, whose experience in the management of the teeth in health and disease is, it is almost unnecessary to say, second to none, are now bringing before the public some of their special preparations. Their Coralite Tooth Paste and Royal Tooth Powder will, no doubt, become general favourites, on account of their pleasantness and undoubted excellence. The other articles are more expensive, and are severally intended for stopping decayed teeth, for preserving front teeth, and for the cure of neuralgia, etc. The sale of these preparations to the public, it is hoped, will be carried on by chemists.

FOX'S PALATABLE OILS.

MEDICINE made easy and pleasant is and ought to be one of the objects of our skill in pharmacy. Mr. Bishop, with his

Citrate of Magnesia, made one of the greatest revolutions in this respect, and the public now does not enjoy nasty draughts so well as the last generation did. Messrs. Fox & Co., of Manchester, have succeeded to a remarkable extent in giving an agreeable flavour to the until now "irreconcilables," castor and cod liver oils. This is a valuable process, inasmuch as these oils will remain on the stomach when the unprepared kiuds will not; and besides, there is no reason at all to imagine that the medicinal properties are in any way affected.



Map of the Geographical Distribution of the Medicinal Substances contained in the British Pharmacopœia of 1867. By a LECTURER ON MATERIA MEDICA. London: John Churchill and Sons.

WE congratulate the anonymous Lecturer on Materia Medica on the production of a map which will greatly facilitate the acquisition of sound knowledge respecting the geographical distribution of medicinal substances. A large map of the world on Mercator's projection, is the foundation of this important work. The different countries are named as usual, and their areas plainly indicated by different tints. Then scattered over this skeleton map we see the names of all the medicinal animal and vegetable substances which are contained in the British Pharmacopœia. The substances are named in the localities to which they are indigenous, in which they are cultivated or produced, or from which they are imported, as specified in the Pharmacopœia. Thus Java claims attention merely as one of the localities from which Camphora is imported, while India is at once seen to be the source of numerous valuable drugs. Each substance is named in one place only, other localities yielding it are noted by references within brackets. Thus we find "Ammoniacum" in Persia, but we are reminded that it is also collected in the Punjaub. The names under which the various natural products are used in medicine are given in preference to the scientific names of the animals or plants yielding them. No one can spend half an hour in the examination of this map without acquiring a considerable amount of knowledge.

Year-book of Facts. 1870. London: Lockwood and Co.

This annual volume, compiled by Mr. John Timbs, has appeared containing a record of the chief scientific and practically useful results of the work of the preceding year. The facts given are classified under the headings—Mechanical and useful Arts, Natural Philosophy, Electrical Science, Chemical Science, Natural History, Geology, and Astronomy. The Year-book is a most useful book of reference, is well arranged, and the articles treated are carefully selected.

LIST OF NEW BOOKS.

Clark's Principles of Surgical Diagnosis. Svo., 10s. 6d., cloth.
Crombie's Lichenes Britannici, etc. 12mo., 4s. 6d., cloth.
Flam's Medicine, Disease, and Death. Svo., 3s. 6d., cloth.
Gulton's Address on Construction of Hospitals. Cr. Svo., 3s. 6d., cloth.
Homœopathic Medical Directory for 1870. Cr. Svo., 3s. 6d., cloth.
Letheby's Food; its Varieties, Chemical Composition, etc. 6s., cloth.
Lyell's Geographical Handbook of Ferns. Cr. Svo., 7s. 6d., cloth.
Marshall's Human Body: its Structure and Functions. 2 vols., 21s.
Norton's Causes, Prevention, etc., of Infantile Diseases. 2s. 6d. cloth.
Robertson's Daily Readings in Natural Science. Cr. Svo., 3s., cloth.
Smith's Copious and Critical English-Latin Dictionary 21s., cl.; smaller 12mo., 7s. 6d., cloth.
Student The, and Intellectual Observer. Vol. IV. Svo., 10s. 6d., cloth.
Thorowgood's Notes on Asthma, etc. 12mo., 4s., cloth.
Veitch's Handbook for Nurses of the Sick. 12mo., 2s. 6d., cloth.
Ward's First Lessons in Inorganic Chemistry. 12mo., 2s., cloth.

Corner for Students.

CONDUCTED BY RICHARD J. MOSS.

The chemical formulæ employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopœia* the symbols corresponding to those adopted here are printed in heavy Clarendon type. The chemical nomenclature generally used in this Corner for Students agrees with that adopted in the new edition of *Fownes's Manual of Chemistry*, which is recommended as a text-book.

QUESTIONS.

I. *EXTRACTUM ERGOTÆ LIQUIDUM, B.P.*—Why is ether employed in the preparation of this extract by the official process; and why is it directed that the ether should be washed?

II. *VOLUMETRIC SOLUTION OF OXALIC ACID, B.P.*—A sample of crystallised potassium carbonate, weighing 10.8 grammes, when dissolved in water, requires for neutralisation 127 c. c. of the volumetric solution of oxalic acid; what is the percentage of carbonate (K_2CO_3) in the sample? How may the potassium carbonate be recovered?

III. *CUPRI SULPHAS, B.P.*—For what purpose is the ammonia test for the purity of this substance ordered, and why is the solution of chlorine employed? Explain with the aid of symbolic equations the production of the violet-blue solution. Is there anything remarkable about the colour of blue vitriol?

IV. *ACIDUM HYDROCHLORICUM, B.P.*—Explain the official process for the preparation of this acid, stating why sodium chloride and sulphuric acid are ordered in the proportion of 48 ounces of the former to 44 fluid ounces of the latter. Compare the actual with the theoretical product of this process.

V. *ACIDUM NITRICUM AND ACIDUM NITRICUM DILUTUM, B.P.*—If a mixture of one pound of potassium nitrate, and one pound of sulphuric acid is distilled, to how many fluid ounces of each of the official acids is the product equivalent?

VI. *QUALITATIVE ANALYSIS.*—Describe a method for the detection of potassium, sodium, and ammonium, in a solution which may contain salts of these three substances.

VII. *CARBON DIOXIDE.*—The gas liberated by the action of sulphuric acid on sodium carbonate, when collected over mercury, is found to measure 1.2 litres, at the standard temperature, the level of the mercury in the gas vessel being 23 m.m. higher than that in the trough, and the barometer standing at 747 m.m. Required, the weight in grammes of the sodium carbonate decomposed.

[One litre of carbon dioxide weighs 1.967 gramme at the standard temperature and pressure.]

VIII. *CHEMICAL TERMS.*—Give a short definition of each of the following terms: Anhydrous, Anhydride, Hydrus, Hydrate.

IX. *CHROMIC ACID.*—Describe briefly the principal properties of this acid and its salts, and give a test by which its presence in a solution may be ascertained.

X. *COMBUSTION.*—Elementary and compound bodies are frequently spoken of as being supporters or non-supporters of combustion: is not the application of these terms objectionable?

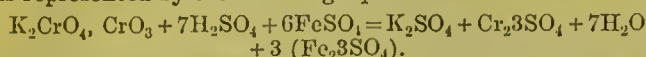
ANSWERS.

I. *QUININÆ SULPHAS, B.P.*—For the detection of quiniidia, or cinchonia, in a sample of this salt, the following process, known as Stoddart's modification of Liebig's process, may be employed:—

Into a glass tube or bottle put 10 grains of the suspected salt, dissolve in 10 minims of dilute sulphuric acid and 60 minims of distilled water; to this add 150 minims of pure ether, 3 minims of alcohol, and 40 minims of a solution of soda (1 part of solid hydrate to 12 of water). Agitate well and set aside for twelve hours, when, if the slightest trace of quiniidia or cinchonia be present, they will be seen at the line of separation between the ether and solution of sulphate of sodium. If only a small percentage of quiniidia be present, it will appear as an oily substratum, appearing under a lens as dust, from the minuteness of its particles. Cinchonia will appear more decidedly crystalline.

II. *VOLUMETRIC SOLUTION OF BICROMATE OF POTASH, B.P.*—The reaction which takes place when this solution is

added to a dilute sulphuric acid solution of ferrous sulphate, is represented by the following equation:—



From this equation it is evident that six molecules of the ferrous salt, are oxidised by one molecule of potassium bichromate, and as the volumetric solution contains 1-200th of the molecular weight of potassium bichromate in grammes, in every 100 c.c., it follows that this quantity of the solution should oxidise 1-200th of the molecular weight of six molecules of crystallised ferrous sulphate, or $\left(\frac{278 \times 6}{200} = \right)$

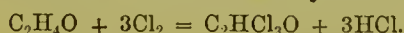
8.34 grammes; therefore the quantity of the ferrous salt oxidised by 121 c.c. of the solution, is found by the following proportion:—

$$100 : 121 = 8.34 : x \therefore x = 10.0914.$$

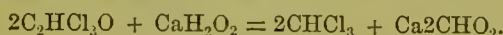
The weight of real salt in 10.84 grammes of the sample being 10.0914 grammes, it follows that the percentage is 93.094, thus:—

$$10.84 : 100 = 10.0914 : x \therefore x = 93.094.$$

III. CHLOROFORMUM, *B.P.*—The generally-received explanation of the reactions that ensue between the materials employed in the preparation of this substance involves the supposition that chloral is formed as an intermediate product. To account for its production it may be assumed that the alcohol is first converted into aldehyde, $2\text{C}_2\text{H}_5\text{O} + \text{O}_2 = 2\text{C}_2\text{H}_4\text{O} + 2\text{H}_2\text{O}$; the oxygen being derived from the calcium hypochlorite, one of the constituents of chlorinated lime. Chlorine from the same source, by acting on the aldehyde, converts it into chloral and hydrochloric acid:—



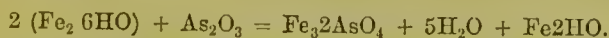
Finally, the chloral by the action of calcium hydrate, yields chloroform and calcium formate:—



The further steps of the process are directed towards its purification, notably from a pyrogenous oil generated during the process, and from alcohol. This latter is removed by the elutriation directed; the former is charred by the sulphuric acid, sulphurous acid being produced. The slaked lime now removes the acids; the calcium chloride the water; and on distillation, pure chloroform is obtained.

IV. FERRI OXIDUM MAGNETICUM, *B.P.*—This substance, which is a compound of ferrous and ferric oxides with water, when exposed to heat in close vessels, yields oxyhydrates and finally, ferroso-ferric oxide; but when heated in the air it absorbs oxygen, and is converted into ferric oxide; it is consequently directed that it should be dried at a temperature not exceeding 120° , at which temperature the oxidation is comparatively slight. The fact that this substance does not effervesce with acids proves the absence of metallic iron, which could not be present in the product of the official process, but is frequently found in ferroso-ferric oxide prepared by other methods.

V. ANTIDOTE FOR ARSENIC.—When ferric chloride is acted upon by sodium carbonate, ferric hydrate and sodium chloride are produced. The reaction between the ferric hydrate and arsenic results in the production of insoluble ferrous arseniate, thus:—



Dried ferric hydrate might not be employed with equal advantage, because by the action of heat it becomes an oxyhydrate ($\text{Fe}_2\text{O}_4\text{4HO}$), which has no action on arsenic.

VI. ALKALOIDS.—Two only of the alkaloids named can be regarded as volatile, viz., nicotine and conine; they are obtained in the distillate when their salts are distilled with potassium hydrate and water. The other alkaloids may be classified as follows, according to their behaviour with potassium hydrate, and acid sodium carbonate:—

Precipitated by potassium hydrate from their salts, readily soluble in excess of the precipitant

Morphine.

Precipitated by potassium hydrate from their salts, insoluble in excess of the precipitant.

Precipitated by acid sodium carbonate, even from acid solution, if the solution does not contain less than one per cent.—

Narcotine.

Quinine.

Cinchonine.

Precipitated by potassium hydrate from their salts. insoluble in excess of the precipitant.

Not precipitated by acid sodium carbonate from acid solution—

Strychnine.

Brucine.

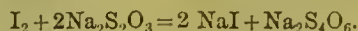
Veratrine.

VII. MANGANESE ORE.—The percentage of manganese dioxide present is 64.642.

The solution of one molecule of manganese dioxide in hydrochloric acid results in the liberation of two atoms of chlorine, thus:—



The chlorine thus liberated, when received in a solution of potassium iodine, liberates two atoms of iodine ($\text{Cl}_2 + 2\text{KI} = 2\text{KCl} + \text{I}_2$), for the removal of which two molecules of sodium hyposulphite are required, as in the following equation:—



From these reactions it is evident that 496 grammes of crystallised sodium hyposulphite ($2(\text{Na}_2\text{S}_2\text{O}_3, 5\text{H}_2\text{O}) = 496$), are equivalent to 87 grammes of manganese dioxide ($\text{Mn}_2 = 87$), and as the volumetric solution employed contains 20 grammes of the crystallized salt in every 1000 c.c., 82 c.c. of it contain $\left(\frac{20 \times 80}{1000} = \right)$ 1.64 grammes, therefore the

quantity of manganese dioxide in the portion of the sample operated on (452 of a gramme) is found by the following proportion:—

$$496 : 1.64 = 87 : x \therefore x = .2887,$$

and to find the percentage we have the proportion—

$$.452 : 100 = .2877 : x \therefore x = 63.642.$$

VIII. CHEMICAL TERMS.—Two compounds are said to be isomeric when they have the same empirical formula, or percentage composition, but exhibit different properties. Strictly speaking, isomeric bodies differ only in physical properties, exhibiting analogous decompositions and transformations, when heated or subjected to the action of the same reagents. On the contrary, the term metameric is employed to designate those bodies which, with the same percentage composition and molecular weight, exhibit dissimilar transformations under similar circumstances; accordingly, the formulæ of such substances are constructed so as to represent the probable arrangement of their atoms. The term polymeric is applied to those compounds which have the same percentage composition, but differ in molecular weight, having in equal volumes unequal numbers of atoms.

IX. ACTION OF ACIDS UPON SALTS.—The following are the principal circumstances under which decomposition ensues when a salt is treated with an acid different from that existing in the salt:—

1st. Decomposition will ensue when, the salt being insoluble in water, and being dissolved in that liquid, the reacting acid can form an insoluble compound with its base.

2nd. An acid can decompose a salt which is in a state of solution, if the acid of the salt is either completely insoluble, or only sparingly soluble in water.

3rd. A salt can always be decomposed by an acid less volatile than that which it contains.

4th. When the acid of a salt, and that employed to react on it, are both gaseous, and at the same time but slightly soluble in water, and when, moreover, their affinities for the bases are nearly equal, the acid which is present in excess will expel the other.

These are some of the laws known as Berthollet's laws.

X. SPECIFIC GRAVITY.—The specific gravity of the solid is 1.891. When the bottle is filled with benzol of sp. gr. .85, it should weigh $(1000 \times .85 =)$ 850 grains; on introducing the 100 grains of solid it is found to weigh 905.04 grains, consequently the benzol displaced weighs $(850 + 100 - 905.04 =)$ 44.96 grains, but as its sp. gr. is .85, 44.96 grains are equal in bulk to $\left(\frac{44.96}{.85} = \right)$ 52.894 grains of water, so

that to find the sp. gr. of the solid, we have $\frac{100}{52.894} = 1.891.$

PRIZES.

The First Prize for solutions to the problems printed in our January number has been awarded to

ALEXANDER FRASER, 50, Lord-street, Liverpool, who carried off the First Prize in November last.

The Second Prize has been awarded to

E. NUTHALL (A. E. I.), Bank Plain, Norwich.

Mr. Joseph Ince's Prize for translation from the Latin and French:—

FREDK. W. FLETCHER, Totton, near Southampton.

Euvres Complètes de Chateaubriand. Ladvocat, Libraire. Paris. Vols. xxviii.

Marks awarded for Answers.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	E. Total.
A. Fraser (1st prize) ..	6	5	5	2	6	5	6	4	2	4	7 52
A. E. J. (2nd prize) ..	6	5	4	5	6	3	4	6	1	4	6 50
A. Weddell ..	6	1	5	0	6	4	5	3	5	4	5 42
J. R. ..	6	5	5	2	6	2	4	4	1	4	4 43
Spero ..	6	4	5	5	6	—	4	6	1	3	3 43
W. Maddocks ..	6	5	4	2	5	7	4	3	1	0	5 42
J. H. Watson ..	5	1	3	0	4	1	5	4	1	4	6 34
Non Nobis ..	6	2	1	5	3	2	3	3	1	4	3 33

TO CORRESPONDENTS.

* All questions forwarded to us for publication in this "Corner for Students" should be accompanied by the answers which the propounders believe to be correct. Communications should include the names and addresses of the writers; those which reach us after the first day of the month will be disregarded.

Prizes.—The students to whom prizes are awarded, are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

A. Fraser.—The number of marks awarded for your solution to Problem VI. last month was, by mistake, printed 9 instead of 5. VI. Strychnine, brucine, and veratrine are not precipitated from acid solutions by acid sodium carbonate, because, under such circumstances, carbon dioxide (which dissolves these substances) is liberated.

A. E. J.—III. Three atoms too much of hydrogen in formula for chloral.

A. Weddell.—VI. See remarks to A. Fraser. VIII. You overlook the principal characteristic of metameric bodies, viz., the dissimilar transformations which they exhibit under similar circumstances.

J. R.—Communications should reach us before the first day of the month. IV. The fact that this substance does not effervesce with acids has no reference to its incapability of forming definite salts; add any acid to potassium hydrate, for example, and a salt will be produced without effervescence.

Spero.—We require numerical results expressed in three decimal places; in working out these fractions it is necessary to bring them to at least five places, in order to have the figure in the third place correct.

W. Maddocks.—IV. See remarks to "J. R." under this head. X. The result which you obtained represents the weight of the benzol and solid together, compared with the benzol as unity.

Books offered as First Prizes.

- Attfeld's *Chemistry: General, Medical, and Pharmaceutical.* (Van Voorst.)
 Brooke's *Elements of Natural Philosophy.* (Churchill.)
 Conington's *Handbook of Chemical Analysis;* with Tables of Qualitative Analysis adapted to the same. (Longmans.)
 Eliot and Storer's *Manual of Inorganic Chemistry.* (Van Voorst.)
 Fownes's *Manual of Elementary Chemistry, Theoretical and Practical* (Churchill.)
 Fresenius's *Qualitative Analysis.* (Churchill.)
 Galloway's *Qualitative Analysis.* (Churchill.)
 Ganot and Atkinson's *Elementary Treatise on Physics.* (Longmans.)
 Garrod's *Materia Medica;* with Modern Chemical Notation. (Walton.)
 Noad's *Chemical Analysis, Qualitative and Quantitative.* (Reeve.)
 Northcote and Church's *Qualitative Analysis.* (Van Voorst.)
 Odling's *Outlines of Chemistry.* (Longmans.)
 Royle and Headland's *Materia Medica.* (Churchill.)
 Williamson's *Chemistry for Students.* (Clarendon Press)
 [Any other scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.]

Books offered as Second Prizes.

- Barff's *Introduction to Scientific Chemistry.* (Groombridge.)
 Bloxam's *Laboratory Teaching.* (Churchill.)
 Church's *Guide for Students in Agricultural Chemistry.* (Van Voorst.)
 Galloway's *First Step in Chemistry.* (Churchill.)
 Gill's *Chemistry for Schools.* (Walton.)
 Hofmann's *Introduction to Modern Chemistry.* (Walton.)
 Huxley's *Lessons in Elementary Physiology.* (Macmillan.)
 Oliver's *Lessons in Elementary Botany.* (Macmillan.)
 Orme's *Introduction to the Science of Heat.* (Groombridge.)
 Potts's *Elements of Euclid.* School Edition. (Longmans.)
 Roscoe's *Lessons in Elementary Chemistry.* (Macmillan.)
 Wornell's *Elementary Course of Mechanics.* (Groombridge.)
 Wurtz's *History of Chemical Theory.* Translated by Watts. (Macmillan.)
 [Any other scientific book which is sold for about five shillings may be taken as a second prize.]

PRIZE FOR TRANSLATION.

I have received with equal pleasure and surprise ninety-five translations, not counting one comic, unsigned, and

good. A singular fact has turned up. Given a manufacturing town, with abundant smoke, smells, and chimneys; from such a place I get answers representing the pharmacies of the district. Breathe but a whisper regarding a fashionable neighbourhood, and the barometer of hope falls; add the charms of natural scenery, and mercury is down to zero.

Our excellent Vice-President, and one other student (and I am sure Mr. Haselden will not dislike the association) are the only two who have correctly translated *Le Bouvier*. The exact corresponding word is Neatherd. We have cowherd, goatherd, and swineherd, the latter occurring in the "Ivanhoe" of Sir Walter Scott, which will be accepted as authority. Nor must we forget shepherd. The idle individual who has been the cause of so much industry in others neither looked after cows, goats, swine, nor sheep. He was not a clown, nor of necessity a countryman, for he might have been a stray apprentice from Rome, disgusted with the city. He was one whom Solomon thought difficult to become wise, for his talk was of bullocks, and in English he is called a neatherd.

Most of my young companions in pharmacy have mistaken *providendo*. True, in a secondary sense it means providing; but here it is to foresee. Exchange *videre* for *venire*, and an exactly similar construction is presented in a well-known sentence, "Pre-vent us, Lord, in all our doings." *Age* means act.

So unexpected has been the interest taken in this matter, that I feel justified in offering a few remarks. Translation is a very difficult art. The best mode of proceeding is as follows:—Laboriously work out the task, then lay the manuscript aside until the text is forgotten. Read it once more, and sternly ask yourself two questions—Does this convey the meaning of the original? Is it English or Anglified? The faults of translation are, on the one hand, to be painfully literal, and on the other, diffuse and fanciful. Celebrated specimens of both are the versions of Homer by Chapman and Pope. We have lately lost one of the noblest expositors of Latin by the death of Professor Conington, of Oxford.

I am unwilling to be behindhand in appreciation of scholarship, and therefore have largely exceeded the original proposition. I am glad to offer as a double prize the works of Chateaubriand, in twenty-eight volumes, to

FREDERICK W. FLETCHER,
Totton, near Southampton.

This is the best edition that has issued from the Paris press. It was brought out under the immediate supervision of the author, and contains his prefaces, notes, and answers to his critics.

I would ask Mr. Fletcher to receive it, not only for himself, but as a mark of my recognition of the care and perseverance evinced by so many others. I would implore him not to slacken in his endeavours, and beg confidently to assure him that when he has read his *Eclogues*, *Second Georgic*, and *Horace*, and finished his *Atala*, one of the loveliest stories in the world, he will regret no time nor labour bestowed on the acquisition of Latin and French literature.

JOSEPH INCE.

26, St. George's-place, Hyde Park-corner.



SHEFFIELD PHARMACEUTICAL AND CHEMICAL ASSOCIATION.

ANNUAL MEETING.

THE Annual Meeting of the members of this Association was held in their rooms, Music Hall, on the evening of Wednesday January 12th; the retiring president, Mr. Hill, in the chair. There was a numerous attendance of members and associates.

The President, Mr. Hill, delivered the following address:—
 Gentlemen,—This being the first Annual General Meeting of the Sheffield Pharmaceutical and Chemical Association, before asking our honorary secretary to read the report, I will remark, that I think you will feel with me, that we have

great reason to congratulate ourselves on what has been accomplished during the first year of the Society's existence. Had I been told three years ago that the pharmaceutical chemists and chemists and druggists of Sheffield would be united in a local association having such a lecture room as this, as well as a separate committee-room, with such a large and useful museum, a small but select valuable library, and so excellent a microscope, and that lectures upon Chemistry, Materia Medica, and Botany had been delivered to our young men, I really could not have believed it; but gentlemen, such is the fact, and I rejoice with you that it is so. The passing of the Pharmacy Act, and the establishment of associations like this, for the education of our future chemists, is the consummation of what we have been for nearly thirty years striving for, and I trust our young men will avail themselves of the means we have so well provided for them. I will now, gentlemen, ask our honorary secretary, Mr. Barber, to read the report.

In presenting the First Annual Report, the Council claim the indulgence of the members in recapitulating the circumstances which led to the formation of the Association.

In 1868, the long-desired and hoped-for Pharmacy Act became law, which necessitated the union of chemists and pharmacutists in the town and neighbourhood of Sheffield into one association, having for its objects the promotion of mutual good-will and general trade interests; the reading of papers, and discussions on subjects connected with Pharmacy and Collateral Sciences; the training and professional education of those who are now required by law to pass the examinations of the Pharmaceutical Society; and the proper upholding of the Pharmacy Act in the district.

In January, 1869, after many preliminary meetings had been held, a code of rules was agreed upon, and a General Meeting of Registered Chemists was convened, at which a council, consisting of sixteen members, was elected. The first step the council had to take was, to procure rooms suitable for the members to meet in, and they were fortunate in securing such in a central position, at the Music Hall, Surrey-street; towards furnishing, and preliminary expenses, the council and a few other members, in addition to their subscriptions, contributed upwards of £25. In these rooms the Association has met for the hearing of lectures and papers.

Towards the formation of a museum and library, liberal donations, amounting to £86, have been received from wholesale houses; also a number of valuable books, and specimens of chemicals.

Courses of lectures to students have been given as follows:—on

“Chemistry as applied to Pharmacy” by G. HARRISON, Esq., F.C.S.

“Materia Medica,” by G. R. GOWLAND, Esq., F.C.S.

“Botany,” by E. BIRKS, Esq., Lecturer on Botany at the Sheffield School of Medicine.

At the ordinary Monthly Meetings lectures have been given, or Papers read as follows:—on

“Payment for Responsibility and not for Material,” by Mr. G. CUBLEY.

“The Adulteration of Food and Drink Act, as incorporated with the Pharmacy Act, 1868,” Mr. G. B. COCKING.

“The Application of the Spectrum Microscope to the Detection of Adulterations,” by H. C. SORBY, Esq., F.R.S.

Several other gentlemen have promised lectures for the ensuing months of the winter session.

An excellent collection of Pharmaceutical Preparations, and Materia Medica Substances, has been arranged, also a good Library of works on Chemistry and Allied Sciences.

A Binocular Microscope, by Collins, with a Bocket's Lamp and reflector, etc., has been purchased, which the council hope will prove very advantageous.

They respectfully solicit all registered chemists who have not yet joined the Society, to do so at once, as it is only by continued and combined support that it can be carried on. Their desire has been, and they trust that of their successors will be, to form a school for the education of young men intended for the trade, and they would earnestly impress upon such the importance of their attendance at the classes which may be formed; the only aim of the council being, to elevate and the better prepare them for the important duties connected with their profession.

INCOME AND EXPENDITURE, For the Year Ending December 31st, 1869.

GENERAL ACCOUNT.

Dr.	£ s. d.	Cr.	£ s. d.
By 54 Members, at 10s. . .	27 0 0	To rent, gas, coal, cleaning	
„ 41 Associates, at 2s. 6d. .	5 2 6	rooms, postage, printing & advertising. . .	24 11 8
„ Balance arising from		„ Balance in hand	10 19 2
Lectures	3 6 9		
„ Cash from Secretary. . .	0 1 7		
	£35 10 10		£35 10 10

FURNISHING, MUSEUM, AND LIBRARY ACCOUNT.

Dr.	£ s. d.	Cr.	£ s. d.
By Special donations from		To Use of St. Paul's School,	
Members	25 1 6	printing, books, carriage, furniture, diagrams, microscope, bottles, etc.	81 1 7½
„ „ Wholesale		„ Cash in hand to balance	30 10 10½
Houses	86 11 0		
	£111 12 6		£111 12 6

TOTAL BALANCE IN HAND.

	£ s. d.
By General Account	10 19 2
„ Museum do.	30 10 10½
„ Microscope do.	4 18 4
	£46 8 4½

The following officers were elected for the ensuing year:—President, Mr. E. Wilson; Vice-Presidents, Mr. J. T. Dobb, and Mr. G. B. Cocking; Treasurer, Mr. Radley; Auditors, Mr. H. Crawshaw, and Mr. Priestley; Honorary Secretaries, Mr. H. W. Malcham, and Mr. G. Bennett; Council, Messrs. Cubley, Hill, Horncastle, Huddleston, Hudson, Ward, and Watson. Votes of thanks to the retiring officers, and to the President for his conduct in the chair, brought the proceeding to a termination.

ANNUAL DINNER.

The Annual Dinner of the members of this Association was held on the 27th January at the Adelphi Hotel, Arundel-street. Mr. E. Wilson, the President of the Society, occupied the chair, and Mr. J. T. Dobb, one of the Vice-Presidents, the vice-chair. The attendance was numerous (about 50), and the dinner was served in Mr. Armfield's best style, and reflected much credit upon him as a caterer. Amongst the guests were Mr. E. Birks, Mr. A. H. Allen, F.C.S., and Mr. Skinner, representative of Messrs. Batley and Watts, London. After the usual loyal toasts had been proposed and honoured, Mr. Hill gave the “Health of the Medical Profession,” and said he was sure the toast he proposed would meet with a hearty reception from all the members of the Association. From the nature of our business operations we ought at all times to be united in friendly co-operation with the members of that profession, and he trusted the time was not far distant when the general practitioners would leave the dispensing of medicines to the chemists and druggists. Previously to the passing of the late Pharmacy Act, he had had conversations on this subject with some of the leading surgeons of the town, and found they would be glad to give up the dispensing of medicines, when the whole of the chemists became an efficiently educated body. The Chairman gave the toast of the evening, “Success to the Sheffield Pharmaceutical and Chemical Association.” He spoke of the success which the London Society had obtained, and said the Sheffield Society was going in the right road to success. Improvements must come, and he hoped when the older members of the profession in the town retired, the younger members would be more respected, honoured, and worthy than their predecessors. Mr. Huddleston responded. The Vice-Chairman gave the toast of the “Honorary Members and Lecturers,” and Mr. Allen responded. Mr. Birks gave the toast of “the President,” and this gentleman having responded, a number of complimentary toasts were proposed, and the evening was spent in a convivial manner.

LONDON CHEMISTS' ASSOCIATION.

ON Thursday, Jan. 6, Mr. J. T. Porter was presented with a delicate chemical balance, in consideration of the valuable

services he rendered the Association as its late Honorary Secretary, and as a token of the esteem felt for him.

On Thursday, Jan. 13, the Annual Dinner of the Association was held. The President, Mr. R. J. Jewell, occupied the chair. More than forty members and friends sat down to a most amply supplied table, served in the best style of the deservedly popular Union Tavern.

On Thursday, Jan. 20, Mr. Weaver in the chair, a very able paper was read by Mr. George Brownen, "On the Proximate Analysis of Plants." He commenced by showing the relation of chemistry to botany, and the use of systematic botany in proximate analysis. The proximate analysis of plants was accomplished by powdering and percolating with different solvents, as ether, alcohol, water, acids, and alkalies. The solutions thus obtained were called "Extracts," and were separately examined by fractional distillation, precipitation or crystallisation, and the use of various re-agents. After urging his hearers not to be disheartened by occasional blunders, he showed the improvement in our Pharmacopœia forms for vegetable preparations, by our *present* knowledge of the constituents of plants, giving us better modes of extraction and purification from inert or putrefying bodies. After a profitable discussion, a hearty vote of thanks was given Mr. Brownen for his interesting paper, and also to the Chairman for presiding.

On Thursday, Jan. 27, Mr. Pickering, on taking the chair, called attention to the new rules of the Association, and also to the register of vacancies and engagements wanted, which no doubt the members would find of use.

Mr. Trask read a paper on "The Physical Properties of Gases and Vapours." After defining what was meant by a "gas" and a "vapour," and giving the laws by which they are regulated, he brought the subject to bear on the workings of Nature and the events of common life. His remarks were illustrated by several interesting experiments.

A discussion ensued, Mr. Willmott relating some of Professor Tyndall's late researches on air and light. A vote of thanks was given Mr. Trask for his able paper. The following question was taken from the "note-box":—"What is the nature of the flocculent matter that forms in a short time in mixtures containing tincture of nux vomica and acids, and ought such mixtures to have a label on them directing them to be shaken before taking?" It was argued that in every case where a separation takes place, or a sediment formed, or where such is likely to occur, a label should be affixed directing the mixture to be agitated. With regard to the flocculent matter, it was said to be a fatty acid (igauric acid), which, though soluble in spirit, was not so in acidulated water, or in pure water.

There were more "queries and notes" in the box, which were allowed to stand over for another meeting.

A vote of thanks to the Chairman terminated the proceedings of the evening.

On Thursday, Feb. 3, Mr. Peal in the chair, the President read a paper on "Carbolic Acid." He first gave the details of the destructive distillation of coal, classifying the products obtained, and then pointed out the source from which carbolic acid is now prepared. He then entered upon its manufacture, stating the position the acid held with regard to other bodies in chemistry, and its physical properties. Mr. Jewell next spoke of its various therapeutical and surgical uses, and of its employment for disinfecting; he also referred to the production of dyes from it. In conclusion, he remarked that he had to thank Professor Calvert for the samples on the table, and for much information on the subject. A long discussion ensued on the best means of dispensing the acid, and its solubility, and also on some of its applications.

Mr. Beynon, the Honorary Secretary, showed what he thought would be a good colour test for carbolic acid and creosote. To one or two drachms of chloroform add a few drops of the liquid to be tested, and drop into each solution a small piece of caustic potash; the potash in the carbolic acid solution will become of a delicate pink colour, whilst that in the creosote solution will become of a reddish-brown. The creosote solution will assume a very brown colour in a short time, whilst the solution of carbolic acid will scarcely be tinged for some hours; two or three per cent. of carbolic acid could thus be easily detected, and by preparing standard solutions, the purity or otherwise of creosote could be determined. Mr. Beynon also remarked that 20 per cent. of

creosote in carbolic acid prevented it from congealing, but if such be exposed to very low temperatures, crystals of carbolic acid were thrown down.

A hearty vote of thanks to the President for his paper, and to the Chairman, concluded the meeting.

MANCHESTER CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE February meeting was held in the Memorial Hall on Friday, the 4th inst., at 3 p.m. Mr. Brown, Vice-President, in the chair.

Two new members and three associates were elected.

The donation from Messrs. Woolley of a very handsome cabinet, about four feet square, and fitted with about 150 drawers, for holding the specimens of materia medica belonging to the Association, was then announced, and the following resolution, moved by Mr. Brown and seconded by Mr. Slugg, was carried by acclamation:—

"That the best thanks of the Manchester Chemists' and Druggists' Association be given to Messrs. Woolley for their present of a most complete and handsome cabinet for materia medica specimens, and that a plate bearing the following inscription be engraved and attached thereto:—Manchester Chemists' and Druggists' Association, 1870, presented by Messrs. Woolley."

A vote of thanks was also passed to Mr. Barber, of Liverpool, for his donation of a "Medico-botanical Map of the World."

The CHAIRMAN read an extract from the *Lancet*, referring to Mr. Hampson's last paper, and congratulated the Association on the wide influence it now exerted through the zeal of some of its members. He then called on Mr. Wilkinsons to read his paper on

THE ADDITIONS TO THE POISON SCHEDULE, AND THE PROPOSED REGULATIONS RESPECTING THE KEEPING OF POISONS.

After describing the recent additions to the Poison Schedule, Mr. Wilkinsons proceeded to say—

"The Schedule now gives a list of articles under twenty-three heads, which may be called 'Poisons by Act of Parliament,' but if we count up the 'Preparations,' we shall find the number increased to nearly eighty articles, which come under the provisions of the Act, besides many others, such as paregoric elixir, various lozenges, etc., which, though comparatively harmless, still do contain a certain portion of some one of the articles in the Schedule; and it is very doubtful whether, strictly speaking, they must not be treated as 'preparations.' There is no objection to the addition to the Schedule of articles specified by name, as red precipitate, etc., because there the meaning is clear, and we know what we have to do; but considering the spirit that animates coroners, magistrates, and authorities of all kinds in any case where druggists are concerned, it was most unwise on the part of the Council to add 'preparations' of no less than six articles to a list already sufficiently difficult of interpretation, from the uncertainty of the meaning to be attached to the word. It is true that in the January number of the *Pharmaceutical Journal* we are referred to a 'case' on this point, submitted to the Privy Council, and the reply to it, published in the same journal for April, 1869; but there is not much satisfaction to be got from it, as it gives no authoritative interpretation, but merely states an *opinion*, and leaves the question totally undecided as to what is or is not a 'preparation' within the meaning of the Act; and we must use our own judgment, and act on our own responsibility in the matter.

"Another difficulty arises in the case of vermin destroyers, which are put in Part 2 of the Schedule; but these being mostly 'preparations' of arsenic or strychnine, which require registration, it is very doubtful whether we shall be safe in simply labelling them 'Poison,' with name and address.

"With regard to the proposed regulations for the keeping and dispensing poisons, we have been so much accustomed to the argument that an improved education would do away with the necessity for using these mechanical substitutes for eyes and brains, that one could scarcely imagine the Council's proposing their compulsory adoption. But so it is; and unless we country druggists speak

out pretty strongly, we shall find ourselves hampered with a series of impracticable regulations that we cannot possibly carry out. There is nothing to object to in the first regulation—that the bottles, etc., be labelled ‘Poison’—provided it is kept within reasonable limits, and not made to apply to articles in common use, as medicines, and not really dangerous. The second regulation, relating to the storing of poisons, is, perhaps, the most objectionable of all. A separate compartment for poisons is, in most cases, quite out of the question. There are few, indeed, who could possibly keep all the various articles in the Schedule in one separate compartment; and even could they, where is the advantage? Why need opium or ergot be kept separate, or aconite and belladonna kept apart, whilst hyoscyamus, conium, and digitalis need not? Besides the risk of mistaking strychnine for morphia, or laudanum for liq. secale would be as great as that of taking strychnine for salicine under the present system. The same objection applies to the ‘angular, fluted, corrugated, or sand-paper covered bottles and jars,’ with this further one, that the system being applied to *all* poisons in the Schedule, from tinct. canthar. to prussic acid, the peculiar bottle will be looked on with indifference, and would become so familiar to the touch that the value of the intended caution would be entirely lost, and mistakes would be far more likely to occur than if these special cautions were restricted to a few really dangerous articles, such as prussic acid, the alkaloids, and such like.

“As to the third regulation, requiring all liniments, etc., to be put into distinctive bottles, could it be applied to prescriptions only, it would meet with no objection; but when we know that the ‘dispensing and compounding’ in many shops throughout the country consists chiefly of pennyworths, it is quite evident that in those cases the rule cannot possibly be carried out; and yet it applies equally to one as the other.

“Do not suppose that I condemn the proposals altogether; on the contrary, I think them all good to a *certain extent*, but most strongly protest against the authority of law being given to them, at least in their present shape. Had the Council recommended these regulations, without the proposal to make them *compulsory*, or had their operation been confined to a few of the more dangerous substances, there would have been little objection; but to require the same regulation to be adopted with every article in the Schedule is sufficient to condemn the proposal altogether.

“To sum up the matter, we now stand in this position—unless we comply with the requirements of the Act, as to labelling and registering the sale of a number of articles not specified by name, we are liable to a penalty of £5; and unless we enter the ingredients of any medicine we dispense which contains any of the said articles, together with the name of the person to whom it is supplied, in a book kept for that purpose, we are liable. And if the proposed regulations are made compulsory, we shall be liable to the same penalty, unless (1) we label every box, bottle, vessel, or package containing one of these eighty articles, with its own name and the word ‘Poison;’ (2) unless we keep them all separate from other drugs, or keep them all in angular, fluted, corrugated, or sand-papered bottles and jars, or in bottles or jars tied over or secured in some way different from those containing other drugs; and (3) unless, in dispensing and compounding, we put all embrocations, liniments, and lotions containing poison into these same angular, etc., bottles, and label them for ‘outward application,’ or words to that effect. So that, in point of fact, we are liable to a penalty of £5 if we sell any person a Dover’s powder, or a cough mixture with laudanum, and do not enter the ingredients with the person’s name in the prescription book; and we shall be liable to the same penalty if we sell a twopenny liniment containing laudanum, or if we put ʒi or ʒij Tr. Lyttæ into a bottle of hair wash, unless we put it into an angular or otherwise distinctive bottle, with a cautioning label of some description.”

A long discussion then took place. Mr. Hampson, Mr. Siebold, and some other gentlemen, speaking in favour of the proposed regulations, whilst Mr. Bostock, Mr. Slugg, and others, considered them impracticable.

Mr. GILL (Pendleton) thought it desirable that the “Preparations” should be enumerated in the Schedule, and the selection not left to the discretion of the chemist.

Ultimately, Messrs. Hampson, Slugg, Robinson, Bostock, Wilkinson, Siebold, Fisher, and Bengier, were appointed a sub-committee, to consider the subject and report to the next meeting, to be held on Friday evening, March 4th, on which occasion W. B. Robinson will read a paper “On Late Hours of business, and the effect of such on the Progress of Pharmacy.”

GREENOCK CHEMISTS’ AND DRUGGISTS’ ASSOCIATION.

THE quarterly meeting of this Association was held on Wednesday evening, the 26th ult. The attendance was good. The minutes of the last meeting having been read and approved, Mr. D. Buchanan’s resignation as president was accepted.

Mr. GEORGE ARMITAGE, in a few appropriate remarks, proposed a vote of thanks to Mr. Buchanan for his past services, and the motion was responded to with feeling.

Mr. W. F. HYNE was then elected president, and immediately afterwards he presented to the Association, in the name of Messrs. Evans, Sons, and Co., Liverpool, one of their handsome cabinets of *Materia Medica*, for the Major Examination.

The SECRETARY read a letter from Messrs. Evans, Sons, and Co., expressing their kind wishes for the success of this Association among kindred institutions; and then submitted a very favourable report.

The PRESIDENT then gave an address on “Quacks and Quackery,” in which he strongly condemned all practices that tend to degrade the medical profession. The subjects of some of the papers that are promised are “Opium and its Alkaloids,” “Cinchona and its Alkaloids,” “Ipecacuanha,” “Cantharides,” “Belladonna,” and “Aconite.” Mr. John Ferguson (honorary member) is to deliver the closing address of the session.

CHEMICAL SOCIETY.

A MEETING of this Society was held on the 3rd inst., Professor WILLIAMSON, F.R.S., President, in the chair.

Mr. CHAPMAN read a paper on “The Organic Matter in Air.” Some time ago the author, in connection with Mr. Wanklyn and Mr. Smith, found that the smallest traces of nitrogenous organic matter in water could be detected by converting the nitrogen of the organic matter into ammonia and estimating the latter with the Nessler test. It occurred to the experimenters that the process might be extended to the investigation of the air by washing it with water. But Mr. Chapman found the operation of washing the air more difficult than he had expected. It seemed the most obvious method to draw air through water, or through some other medium which would have afterwards to be washed with water. The absorption by water alone proved insufficient. Filters of cotton wool and gun cotton acted very well; but neither of the two materials could be obtained free from traces of nitrogenous substances. Asbestos seemed to be sufficiently good; but the preparatory treatment it has to undergo before its use in the experiment is too troublesome. Lastly, finely powdered pumice-stone was tried as a filtering medium and was found satisfactory in all respects. It has to be heated to redness before it is employed, and is then moistened with some water spread over coarser pieces of pumice, which rest on wire gauze fitted into a funnel. The funnel is connected with one neck of a Wolfe’s bottle, whilst the other neck is joined to an aspirator. When a sufficient quantity of air—say 100 litres—has been drawn through the apparatus, then a pumice is transferred to a retort which contains water freed from ammonia and organic matters, and the operation is now proceeded with exactly as if it were an estimation of nitrogenous organic matter in a sample of water. By this method Mr. Chapman found that the air of crowded rooms contains suspended fixed organic particles, as well as volatile bases. The first can be removed by filtration through cotton wool; the latter pass through the filter, and when conducted into water can be detected therein. Air collected from the neighbourhood of a sewer contained notable quantities of those volatile bases. The author thinks it would be of interest to investigate by the

above-described method the air in hospitals, fever wards, and the like places.

In another paper communicated, "Some New Reactions of Alcohols,"

Mr. PERKIN exhibited a modification of Berthelot's method for the "Synthesis of Hydric Cyanide" (prussic acid) by the direct union of acetylene and nitrogen under the influence of the electric spark. Mr. Perkin takes advantage of the fact that nearly all the hydro-carbons, when submitted in the state of vapour to the action of the spark, yield more or less acetylene. Nitrogen was made to bubble through benzene; then to pass through a globe in which the spark was discharged, and thence into a solution of silver. Even after a few seconds, abundant evidence of the formation of hydric cyanide was obtained. Hydric cyanide is further produced when the spark is discharged in a mixture of ammonia-gas and ether vapour. If, however, nitrogen instead of ammonia is employed, no prussic acid is formed. Mr. Perkin's modification of M. Berthelot's method is well adapted for purposes of lecture demonstration.

DR. RICHARDSON ON CHLOROFORM.

On the afternoon of Tuesday, the 1st inst., Dr. Richardson commenced a course of lectures on Death by Chloroform before a large and highly appreciative audience. The abstract of the first lecture given in the *Lancet* is here reprinted. Our contemporary says:—The lecture was preliminary in its general character; and was chiefly devoted to clearing the ground of certain prevalent errors, and to the enunciation of certain general principles. Dr. Richardson believes that the proportion of deaths from chloroform will be about one in from 1,500 to 2,000 cases of its administration; and he puts aside as exceptional, or accidental, or as being eventually raised to the same rate, the smaller mortality that has taken place in some institutions and in some hands. Admitting that there must be a difference between the patient who is killed by chloroform and the patient who is not killed, he declares that we do not at present know what the difference is. He recognises only one bodily condition as a distinct source of increased risk; and that is, a heart with its right ventricle dilated, and attended by bronchial cough and dilatation of veins. In one such case he declined to administer chloroform; and the patient died during its administration by another. Age, sex, the nature of the disease, the severity of the operation, and the skill of the administrator, he sets aside as having little or no bearing upon the result; and at least as adding nothing to what he calls the necessary average of mortality. He proceeded to speak of the precautions that should be taken; and laid much stress upon the effects of temperature and barometric pressure in determining the quantity of chloroform vapour that would be diffused in the air. He advised that the temperature of an operating room should be raised to 65°; that the preliminary fast of the patient should not exceed three hours in duration; that the last meal should be fluid, or semi-fluid (milk and beef-tea, with an admixture of grated biscuit, was recommended); that a little alcohol should be given shortly before inhalation, purely for the sake of its influence upon the mind; that the recumbent or semi-recumbent posture should be enforced, and that, whichever was selected, the patient should not be moved about during the inhalation; and lastly, that, as a rule, the administration should be rapid. He referred to the manner in which chloroform is resisted by men of great muscular power, while those of active brain succumb to its influence more readily; and, finally, he demonstrated by two experiments the mode of death. In a pigeon fully narcotised, a galvanic current called the muscular system into prompt activity, showing that the anæsthetic left the muscles unaffected, and that its action was upon the nervous centres. In a rabbit that has ceased to breathe, the lungs were found contracted and pale, while the heart was beating rhythmically; showing that the respiration was the vital function that failed; and also that the expiratory effort continued after inspiration had ceased. In subsequent lectures the subject will be continued, the means of resuscitation pointed out, and the uses of other anæsthetic agents discussed. We gather, from some of Dr. Richardson's observations, that he believes a person apparently dead from chloroform—that is,

a person who has ceased to breathe, and who would actually die if either neglected or improperly treated—may be restored to life in almost every case; and that thus his rather large proportion of "necessary mortality" may be converted into a mortality that will be only temporary or apparent.

PARLIAMENTARY INTELLIGENCE.

COMPULSORY VACCINATION.

IN the House of Lords on the 10th inst., Lord Ravensworth presented two petitions from Durham, complaining of the operation of the Compulsory Vaccination Act. The noble lord remarked that if the allegations they contained were correct, the attention of the Government ought to be called to them.

In the House of Commons on the same date, Mr. B. Potter presented a petition from Rochdale, praying for an inquiry into the effects of vaccination upon the public health.

SCIENCE AT THE MINT.

The Chancellor of the Exchequer, in asking leave to bring in a Bill to consolidate and amend the laws relating to the Coinage and Her Majesty's Mint, thus referred to the changes made in the Government of the Mint:—The recent death of Professor Graham, the late Master of the Mint, whose scientific attainments shed lustre not only on his own name, but upon the country, occasioned us to take a survey of the whole subject of the Mint. The House is no doubt aware that the Masters of the Mint in the old time—in the time of Sir Isaac Newton, for instance—were not Government *employés* as they are now. Sir Isaac Newton was a contractor with the Government for the coinage, and I believe he realised in that capacity a handsome fortune. At the end of the last century, however, the Master of the Mint became a political officer who came in and went out with the Government. The last person appointed under this system was Mr. Shiel, on whose decease, in 1851, the plan was adopted of appointing eminent men of science, the first of whom was Sir John Herschel, on whose resignation, in 1855, the late Professor Graham was appointed to the office. Well, the result of our recent inquiries is this. We found there were two principal officers in the Mint—namely, the Master and the Deputy-Master—and we soon became satisfied that there really was not sufficient work for two officers, and that it was not just nor fair to the public to employ two persons to perform the duties. The question then arose, with which of these two officers ought we to dispense? We accordingly considered the duties which had to be discharged, and came to the conclusion that the mintage is, after all, a very ordinary and routine kind of manufacture, requiring, no doubt, care and attention, but rarely raising any difficult points which demand the attention of a man of science. Moreover, when such points do arise, they can be stated in the form of a problem which may be easily solved by some of the scientific gentlemen who are so numerous in this country. The daily duties of the Mint require the attention of a man of business, versed in the affairs of public offices, and able to manage and thoroughly well direct the routine of a public establishment. Having arrived at these conclusions, it appeared to us that it was not our duty to recommend that the office of Master of the Mint should in its present shape be filled up. At the same time it was considered desirable not to destroy that ancient office, but rather to hold it in reserve, so that if any new emergency should arise, or if the plan we propose should not succeed, we may be able to revive it. We propose, therefore, to unite it with the office which I have the honour to hold, taking away from it its salary; and to leave the daily executive work of the Mint in the hands of the present efficient Deputy-Master, Mr. Fremantle. The Chancellor of the Exchequer will perform all those duties which by Act of Parliament or otherwise require the action of the Master of the Mint, while the executive duties will be carried on by Mr. Fremantle in conference with the Chancellor of the Exchequer for the time being. By that operation, together with certain other reforms which Mr. Fremantle and other officers of the

Treasury associated with him have been able to carry out, a reduction will be effected in the estimates of the next financial year of 3,500*l.*; and I hope before long to be able to effect a still further reduction.

THE RELATIONS OF THE STATE TO SCIENTIFIC INSTRUCTION.

ON the 4th inst., a deputation, consisting of members of the Council of the British Association for the Advancement of Science, waited on the Lord President of the Council and the Right Hon. W. E. Forster, M.P., to urge upon them the appointment of a Royal Commission to inquire into the relations of the State to scientific instruction and investigation, and to represent to them the conviction of the Council that no such inquiry will be complete which does not include the action of the State in relation to scientific education, and the effects of that action upon independent educational institutions. The following gentlemen composed the deputation:—Professors G. G. Stokes, President; J. F. Bateman, F.R.S., Warren De la Rue, F.R.S., Douglas Galton, F.R.S., Francis Galton, F.R.S., J. P. Gassiot, F.R.S., W. R. Grove, F.R.S., T. A. Hurst, F.R.S., J. D. Hooker, F.R.S., T. H. Huxley, F.R.S., A. C. Ramsay, F.R.S., W. A. Miller, F.R.S., W. Spottiswoode, F.R.S., Lieutenant-Colonel Strange, F.R.S., Colonel Sykes, F.R.S., J. J. Sylvester, F.R.S., T. Thomson, F.R.S., and A. W. Williamson, F.R.S.

Professor STOKES said that an opinion had always been pretty generally entertained among scientific men that the relations of the State to science were not on so satisfactory a footing as might be desired. In the first place, there were those wants of science which required to be met by State support. It was true that considerable sums of public money were in some shape or other devoted to scientific objects. In regard to astronomical observation, for instance, there was the National Observatory at Greenwich; and with regard to meteorological observation, besides the Meteorological Department of the Royal Observatory, there were recently established a series of meteorological observations throughout the country, or rather meteorological observations were carried on at the expense of Government at observatories already in existence. There were also the British Museum and the institution at South Kensington, where the two very dissimilar objects of science and art were mixed together, so that it was not easy to make out what award fell to science and what to art. These examples showed that in certain directions the State was by no means illiberal in support of science. There were, however, other wants, or what many supposed to be wants, which were almost wholly unprovided for. He would mention especially one which occupied a prominent place in the discussions which resulted in the adoption by the British Association of the two resolutions which he (Professor Stokes) had had the honour of forwarding to his Lordship—the prosecution of experimental research as distinguished from the observation of phenomena. This was an object which at present received almost no support, except in so far as experimental investigations were connected with some department of Government, as in the case of the investigation as to explosive agents at Woolwich. There was, however, a grant of £1,000 made annually by Government for scientific objects, which was placed at the disposal of the Royal Society. This grant, small as it was for the whole country, had been a means of calling out a very great amount of scientific activity. The manner in which it was all but exclusively disposed of was this: individuals who felt an interest in some scientific investigation applied to the Royal Society for a portion of the grant to defray the cost of instruments or chemicals necessary for the investigation, they giving their time to the conduct of it gratuitously. Now, the greater number of these persons were men whose hands were very fully occupied with work of their own, and they could, therefore, only devote their spare moments to these investigations. It was obvious that there were many investigations which would be very important, but which were so extensive as to require the main part of a man's whole time, and, in addition, appliances beyond the reach of a private establishment. It was the opinion of many that a national institution was required for carrying on these scientific researches. He did not express an opinion him-

self, for the whole subject was a very large one. If such an institution were, however, established it would be important to ascertain whether, in the minds of scientific men generally, its want was felt, and to sift their opinions in a thorough and impartial manner. That could only be done by a Royal Commission. That was what was regarded by many scientific men as a prominent want. Then, as closely connected with the prosecution of science, there was the whole subject of scientific education, and it was desirable to ascertain the amount of science taught in the various establishments throughout the country, and whether the teaching of science requires to be supplemented by Government aid. And in the granting of Government aid it required investigation as to the principles to which the grants should be devoted—whether there be any special branches of science, such as chemistry, very generally needed. The first step would be to consider whether existing institutions met the demand. It might be said that the country itself should found institutions for objects so desirable as chemistry. But it was a question which would involve a good deal of consideration as to what special principles Government aid should be afforded. This opened a subject which it was very desirable should be investigated by an authoritative body like a Royal Commission, which would in the end express an authoritative opinion on the whole subject. Government had at different times and in various manners granted sums of money for scientific objects, and the result was that the Association was impressed with a conviction that it was desirable to have a Royal Commission to inquire whether those grants might be better applied, or whether in some instances they might be wholly or in part withdrawn.

Earl DE GREY said that the opinion of so important and influential a deputation would necessarily have great weight with the Government. As to aid to experimental researches, of course on the threshold of inquiry there would be the question of whether it was desirable that the Government should afford aid, or whether it should not rather be left to the zeal and industry of scientific men; and what means should be adopted of specially selecting those to whom such assistance should be afforded.

Professor STOKES said he could not express any authoritative opinion on the subject. He knew it to be the opinion of many scientific men that a national institution was needed. If such an institution were established, he did not by any means suppose that it would swallow up the whole experimental research carried on in the country. It was always desirable that certain kinds of research should be carried on by private individuals. But there were researches of so important and lengthy a nature as to be beyond the reach of private establishments.

Professors HUXLEY and WILLIAMSON strongly advocated the appointment of a Royal Commission, and on dismissing the deputation Earl De Grey said he would lay the matter before his colleagues and learn their decision.

BANKRUPTCY.

J. O. ABBOTT, CHEMIST, NOTTINGHAM.

THE first meeting in this matter was held before Mr. Registrar Tudor on the 18th ult. Mr. Brown appeared for the bankrupt, and Mr. Hind (from Messrs. Enfield and Dowson's) for creditors, who stated that a proposition had been made to pay a composition of 5*s.* in the pound in three months, and a further sum of 5*s.* in the pound in three months after, the bankrupt's father guaranteeing the composition. Mr. H. Archer, Nottingham, was appointed assignee.

W. H. HAWKINS, DRUG BROKER, LIVERPOOL.

At the Liverpool County Court on the 7th inst., the case of this bankrupt, William Henry Hawkins, drug broker, of Exchange-alley, Liverpool, came on for hearing. The debts are estimated at £600; the assets at £14. On the application of Mr. Etty, and there being no opposition, the bankrupt passed his examination, and obtained an order of discharge.

S. B. ROBERTS, APOTHECARY, SOUTH NORWOOD.

At the Court of Bankruptcy, Lincoln's-inn-fields, on the 8th inst., Stewart Blacker Roberts, of 1, Park-terrace, South

Norwood, apothecary, passed his last examination; but at the instance of a creditor, the consideration of the application for discharge was adjourned in consequence of a pending Chancery suit, which might affect questions of conduct. The accounts showed debts and liabilities of £6,155, with assets £326.

WALTER SCOTT, DRUGGIST, SOUTH STREET, SHEFFIELD MOOR.

At the Sheffield County Court on the 13th ult., the case of this bankrupt came on for hearing. Mr. Blackburn supported the bankrupt, and Mr. Clegg was instructed to oppose, but stated that, as Scott had promised to produce the accounts required, he should withdraw any opposition that he might make. Accordingly, the bankrupt passed his last examination, and received an order of discharge.

LAW AND POLICE.

THE ELECTRO-SWEATING PROCESS.

At the Central Criminal Court, on the 31st ult., James Clifford was indicted before Mr. Commissioner Kerr for feloniously impairing, diminishing, and lightening certain of the current gold coins of the realm. Ellen Clifford, his daughter, about twelve years of age, was charged with uttering the coin so impaired, diminished, and lightened with a guilty knowledge. Both prisoners pleaded "Not Guilty." The circumstances of the arrest having been described by different witnesses, Mr. William Chandler Roberts, chemist to the Mint, gave evidence of a most interesting character. He said the box taken from the prisoner's house contained two galvanic batteries, a brush, a wire brush, a pair of scissors, two steel burnishers, and two knives. The batteries were not then charged. The usual trough was absent, but he saw that a cup was used for that purpose. He received from the police the bottles containing the liquid taken from the batteries, and he had charged them with that liquid. In an hour he reduced a half-sovereign by 3-10ths of a grain. With a more powerful battery of his own, he obtained 10 grains of gold in half an hour. Among the bottles found in the male prisoner's possession were two containing sulphate of copper and sulphuric acid. The egg cup contained nitric acid, with a small quantity of gold. The board, with an indented hole in the centre, was used to support sovereigns after the operation of "sweating" had been performed, and to enable them to be burished. Immediately after the operation they would be very dull, and the Queen's head would be almost obliterated. Electro-gilding was exactly the reverse of this operation. By it gold was deposited, by the latter gold was removed. As the batteries then appeared they would not be in a proper position for electro-gilding; and if that had been required to be done the places of the wires would have been changed. Of the two sovereigns found in the male prisoner's pocket, one had been lessened by 11 grains and the other by 12½ grains. A grain was worth 2d. He should say they had been acted on by means of the batteries. The coin tendered to Mr. Westerby was 13 grains deficient; those to Messrs. West, 15 grains, 12 grains, and 13 grains respectively, and that to the witness Mann (a half-sovereign), 11½ grains. In a sovereign 22 parts out of 24 were gold. After the operation of "sweating" had been performed, part of the alloy would still remain in the coin. He had proved by personal observation that sovereigns could be deteriorated in the way described. The emery powder was used for the purpose of still further reducing the coin by friction. He had analysed 200 grains of the coal handed to him by Inspector Honey, and over which the contents of the cup had been thrown by the prisoner. He found it contained half a grain of gold. He scraped the wooden plyers, and had also obtained gold. The three rings handed to the witness Chapman by the prisoner's wife were brass, and had been electro-gilt. Proto-sulphate of iron could be used in the precipitation of gold. All the chemicals found in the prisoner's house might have been used in the operations. Being cross-examined by the prisoner, the witness said the batteries were very suitable for electrotyping, blasting, copper joining, and soldering. Galvanic batteries were extensively used by amateurs, and he should expect to find the same tools among them. The position of the wires was of the greatest importance. To deposit gold a solution was required. The gold extracted

by witness was almost pure. A person wishing to deposit gold would certainly not use copper wire as in this case. He could not say that the gold produced ever formed part of a coin, but he had a strong belief on the subject. The same articles would be used to extract gold from gilt articles and from quartz. The male prisoner's defence was most ingenious. His explanation of the use of the galvanic batteries was, that being an artilleryman, he was engaged in inventing a new torpedo for the defence of works and for artillery purposes in general. It would be 12 times more powerful than the best blasting powder, and he had prepared a small cast of it in metal and plaster of Paris. To close the cylinder it was extremely dangerous to use any heat, and the soldering necessary to join it was done by him in the ordinary electrotype process. For that purpose, and that only, he used the battery, and he denied that he had committed the slightest illegal act. He said the coins tendered by his daughter were perfectly good, and the mere possession of them was not an offence. He asked the jury to consider the quantities of light silver in circulation, and he argued that the mere value of the money made not the least difference in the offence, and that if light silver was permitted no exception ought to be taken to a similar circulation of gold. He concluded by contending that the prosecution had entirely failed in proving any guilty knowledge by him or his daughter. He had served the Queen for 22 years and had been in receipt of a pension, of which, if convicted, he would be deprived. That fact alone would have been sufficient to have deterred him from committing an illegal act.—Mr. Commissioner Kerr having summed up, Mr. Coleridge intimated that the Treasury would withdraw the charge against the little girl.—The jury, after a short interval, found the male prisoner guilty, and formally acquitted Ellen Clifford.—The prisoner declared that he was not guilty, and that the jury, who were in error, had wronged him.—Mr. Commissioner Kerr, in passing sentence, said it was a sad thing to see a man of prisoner's ability placed in such a position. He was not sure he ought not to pass a sentence of penal servitude; but, taking into consideration the loss of the prisoner's pension, which would be the result of his conviction, and that he would have to begin the world again under every disadvantage; taking also into account that he probably was not altogether aware of the consequences of such a crime, he sentenced him to two years' imprisonment, with hard labour.

CONVICTION UNDER THE PHARMACY ACT.—VERMIN POWDER.

At Barnard Castle on the 15th ult., Mr. Edward Davies, chemist, was charged by Superintendent Baxter with having sold a packet of Cliff's vermin killer, the same not having been properly labelled with the name of the article, and the name and address of the seller of the poison: and on another summons with having neglected to register such sale, and obtaining the signature of the purchaser thereto, the said packet containing a poison within the meaning of the Act of Parliament, and contrary to the provisions of the same—31 and 32 vict. cap. 121., sec. xvii.—Police-Constable George Heyward proved making the purchase of Edward Hall, an assistant of Mr. Davies; he was not questioned as to the purpose for which he required it; it was not labelled strychnine, neither was Mr. Davies's name or address upon it. It was merely labelled "poison." There was no entry made in the register, neither did he attach his signature to any entry.—Mr. Davies pleaded not guilty, but upon Supt. Baxter asking for an adjournment in order that he might obtain the evidence of the analyst, he withdrew this plea, and admitted the sale, and that the article contained strychnine.—A copy of Mr. Blunt's analysis was then put in. The amount of strychnine in the packet was estimated at 1.2 grains.—The defendant attempted to show that the strychnine contained in the powder did not come within the intention of the Act, inasmuch as it was not pure strychnine, but mixed with other ingredients, and quoted the case *Phillips v. Lester* in confirmation of this opinion. He was reminded, however, that the case quoted was taken under a special Act of Parliament, and not under the Pharmacy Act, and that the 17th section of this latter Act distinctly forbids the sale of any of the articles mentioned in the first part of Schedule A, except under the restriction therein set forth. These restrictions the defendant set at naught, and the conviction was now asked for.—The Bench consulted, and fined

the defendant 2s. 6d. and 9s. costs.—Mr. Baxter applied to withdraw the second summons, which was accordingly permitted.

COCHINEAL ROBBERY.

At the Middlesex Sessions, on the 17th ult., Edward Smith, age 23, and John Davis, age 25, pleaded "Guilty" to stealing 9 lbs. of cochineal, value £4, the property of the London and St. Katharine's Dock Company. Mr. Grain (instructed by Messrs. Humphreys and Morgan) prosecuted on behalf of the company. On the 12th ult., a bag of cochineal was left safe on the quay in the dock; on the 13th, Maxwell, one of the company's officers, saw it had been cut open, and noticed a trail of cochineal leading from the bag to a steamer. On the deck of the steamer the prisoners were standing, and on them 9 lbs. of cochineal, similar to that stolen from the bag, was found. A previous conviction having been proved against Smith, Mr. Serjeant Cox sentenced him to eighteen months' imprisonment, with hard labour, and for seven years after to be under police supervision; and Davis to nine months' imprisonment, with hard labour.

ROBBERY BY A SERVANT.

At the Birmingham Police Court, on the 8th inst., a man named Henry Clark, a porter in the employ of Mr. Thoruley, druggist, Snow-hill, Birmingham, was sentenced to three months' imprisonment for stealing a can, containing one gallon of colza oil, the property of his master.

IMPERFECT BALANCE.

At the Sheffield Police Court, on the 27th ult., Mr. Walter Scott, druggist, South-street, Moor, was fined 10s. and 8s. costs for having a pair of paint scales $1\frac{1}{2}$ oz. against the buyer.—Mr. Thomas Jackson, druggist, Pond-street, was fined 10s. and 4s. costs for having in his possession a pair of scales one ounce against the buyer.

DAMAGE TO CHEMICALS, ETC.

On the 12th ult., an action was brought at the Sheffield County Court, by Mr. Joseph T. Dobb, manufacturing chemist, Westbar, Sheffield, to recover from Messrs. Garside and Shaw, of the same town, the sum of £2 10s., being the amount of damage to a horse, and of chemicals destroyed by the negligent driving of a man employed by the defendants. Mr. Binney (for plaintiff) said that the particulars of the claim were 5s. for muriatic acid, or spirits of salt destroyed; 3s., the value of carbon destroyed; and other damages, including injury to the horse and veterinary charges. It appeared that through the negligent carelessness of defendants' man, a piece of timber struck a carboy filled with spirits of salts, on the plaintiff's dray, and broke it, thereby causing the fluid to exude, and some to run upon the horse's back, seriously injuring the animal. His Honour thought that the negligence had clearly been proven, and gave a verdict for plaintiff, £1 18s.

ANTI-VACCINATION.

On the 2nd inst., Mr. J. A. H. Toulson, chemist, of Leeds, who has offered a most vigorous opposition to vaccination was fined for the second time 20s. and costs, for refusing to have his child, eighteen months old, vaccinated. Mr. Toulson intimated that he should pay no further fines, and expressed himself prepared to serve the month's imprisonment instead. Just about the time for the gaol van to depart, however, with Mr. Toulson, he yielded to the wishes of his friends, and instead of going to gaol, he paid the fine, was released from custody, and went home.

GOLD PURLOINED BY AN ASSISTANT.

At the Birmingham Police Court, on the 9th inst., a chemist's assistant named Henry Joseph Allwood, residing at Smethwick, was charged with stealing a quantity of gold, the property of Mr. W. Bowater, chemist and dentist, Islington, Birmingham. Prisoner had been reading the cheap literature of the day, and faneing that he should like to become a "prairie hunter" or some notable personage in the backwoods, had been in correspondence with some shipping houses as to the cost of his passage out; and had purloined gold to the value of £12, the property of his master, to pay expenses. The Stipendiary, Mr. Kynnersley,

reprimanded him, and said the best thing that could be done would be to send him to gaol for a long period that he might have time to think of his foolishness. The prisoner was consequently sentenced to six months' imprisonment.

THE PETROLEUM ACT.

At Guildhall, on the 27th ult., John Christian Merges, of 178, Bishopsgate-street Without, was summoned before Sir James Clarke Lawrence, M.P., by Mr. J. F. Johnson, one of the city inspectors of weights and measures, for selling petroleum without putting a label on the bottle or can, with the following notice:—"Great care must be taken in bringing any light near to the contents of this vessel, as they give off an inflammable vapour at a temperature less than 100 deg. of Fahrenheit's thermometer,"—by which he was liable to a penalty of £5 for each offence. The City Solicitor prosecuted, and said that two summonses had been taken out against the defendant, because it had come to the knowledge of the authorities that he was systematically violating the Act of Parliament, both by his mode of storing and selling the benzoline. He had got a licence for storing three gallons of petroleum, on the condition that he should keep it in a patent drum, but whenever the inspectors went there the drum was always empty, and the defendant said he had none in stock. He would be obliged to ask the magistrate to inflict the full penalties, because they had found by experience that light fines were not sufficient to deter dealers from violating the Act of Parliament. After hearing the evidence Sir James Clarke Lawrence said it was clear to him that the defendant had not complied with the Act of Parliament either in storing the petroleum or in labelling it. The rules for keeping and selling it were very proper precautions to prevent accidents from the use of a dangerous article, and they ought to be adhered to. The defendant had got a licence to store three gallons of petroleum in a patent drum, and yet he never put a drop into it, for it was always empty when the inspectors went to see it. It was a trouble, no doubt, to go upstairs to the drum every time it was wanted, and therefore the defendant kept it in cans and bottles in his shop, which was not allowed by Act of Parliament. He did not think it was a case in which he should inflict the full penalties in both instances, but the defendant must pay one fine of £5 and the cost of both summonses, or in default one month's imprisonment. The City Solicitor reminded Mr. Merges that by the Petroleum Act, 1862, the conviction had cancelled his licence, and he must not now sell any more petroleum until he got a new licence. The fine and costs were paid.

Louis Whitehead, of Fore-street, was also summoned before the magistrate for selling petroleum without having obtained a licence to do so, by which he had rendered himself liable to a penalty of £20 a day. The defendant pleaded "Guilty," and in extenuation said he left the matter to his foreman, and he had not informed him the licence had not been granted, but as soon as he found it out he stopped the sale. The foreman was called, and he made a statement similar to his master's. A mitigated penalty of £10 and costs was imposed and paid.

At the Wednesbury Police Court, on the 8th inst., Messrs. Bethell & Co., naphtha manufacturers, of Gold's Green, near Wednesbury, were summoned before Isaac Spooner, Esq., stipendiary, for having, on the 31st of December, kept in a building of which they were the occupiers 230 gallons of naphtha, within fifty yards of another building in which goods were stored, the Messrs. Bethell not having a licence for storing petroleum. Mr. Topham appeared for the defendants. Mr. Horder, the inspector, stated that on the day in question he visited the works of the defendants, and found 230 gallons of naphtha in a building situated a short distance from a lime store, adjacent to which was a dining-room used by the men. He had seen some of the lime sold, and he had heard of its being sold at other times.—Mr. Topham stated that there were points of law in this case not only important to his clients but to all tar distillers throughout the country. He submitted that works like Messrs. Bethell did not come within the provisions of the Act relating to petroleum, and that the building containing lime was not one in which goods were stored as contemplated by the Act. It was a portion of the works used by the defendants in the process of distilling tar, and was being so used at the time of Mr. Horder's visit. The

works had been in existence fourteen years, and they had never been asked to take out a licence, and it had never been considered that their trade came within the provisions of the Act. The Act provided for the safe keeping of petroleum, but defendants were the producers; they were coal-tar distillers, by which process naphtha was produced. Lime was one of the materials used, and the building containing it was part of the works.—The manager of the works (Mr. Halliday) proved the lime stood there was used in the process of purifying and in building. It was never sold. Messrs. Bethell had erected their works in the most isolated spot, and adopted all the precautions possible.—Mr. Spooner said he should like to hear more evidence as to whether lime came within the definition of "goods." He ultimately said he would dismiss the case at once if the defendants would promise to remove the petroleum store to another part of the works distant from the lime shed. This having been agreed to by Mr. Topham on the part of the defendants, the case was dismissed, and the parties left the court.

INFRINGEMENT OF THE PETROLEUM ACT.

William Fletcher was charged at Liverpool, on the 26th ult., with exposing for sale petroleum which gave off an inflammable vapour at a temperature of less than 100 deg. The inspector stated that he had examined samples taken from eighteen tins, and found that the spirit would ignite at 42 deg. For the defence it was contended that the petroleum was not exposed for sale, but had been made up in licensed sheds in bottle to be sent to Loughborough, but the Bridgewater Trustees, by whom it was intended to transmit it, would not receive it, as they had no direct communication with Loughborough, and then it was taken to defendant's stores in William Brown-street, with the intention of sending it by rail. In proof of these statements he called Mr. Armstrong, the defendant's manager, but the bench held the charge proved, and imposed a penalty of 50s. and costs.

SERIOUS CHARGE AGAINST A SURGEON AND A CHEMIST.

On the 9th inst., James Wilkinson, surgeon, Birmingham, and Henry Duckers, chemist, Market Drayton, were brought up in custody before Major Broughton, and Mr. J. Tayleur, at the Court House, Market Drayton, charged, the prisoner Wilkinson with having, on the 13th of January last, feloniously and unlawfully used certain instruments unknown, on a female named Ann Hughes, with intent to cause miscarriage; and the prisoner Duckers with having, on the 15th of January, unlawfully administered a certain noxious thing unknown to the said Ann Hughes, with intent to cause miscarriage. At a certain stage of the preliminary examination the charge brought against Wilkinson was extended to Duckers, and eventually both prisoners were committed for trial at the next assizes.

ACCIDENTS.

On the 9th instant a serious accident occurred to a young man named Percy Astley, an apprentice to Mr. Devinton, chemist, Market-place, Dudley. He was endeavouring to gain access to the back premises by climbing over some large gates; in doing so his foot slipped, and to save himself from falling he tried to grasp the top of the gate, and his hand coming with great force on an iron spike, it penetrated his hand. The unfortunate young man hung from it until released by a person who happened to be in the vicinity at the time of the accident. He was immediately taken to the surgery of Messrs. Horton and Tanner, where his hand was dressed. He has sustained a severe lacerated wound in the hand, and serious shock to the system.

On Wednesday last, a fire occurred in the boiler house of Messrs. J. and J. Blott, manufacturing chemists, at Broomfield-street, Poplar, during the performance of some chemical operations, and it was not extinguished until about two-thirds of the roof had been destroyed.

On the 15th ult. a fire occurred in the premises of Mr. James Kirby Vickers, an oil and colourman, 32, Aldersgate-street. A boy named Roberts perished in the flames, and a young man named Cave received injuries from which he died on the 17th ult. From the evidence given at the inquest it appeared that Roberts and another boy were in

the back cellar filling a two-gallon can from a larger one, containing a varnish known in the trade as Brunswick black. The deceased man Cave entered the cellar while the operation was being performed, and, being unable to pass the two lads, waited until they could finish it. A naked candle had been taken down by Roberts, and suddenly a gurgling noise was heard in the mouth of the larger can, and the liquid burst into flames. The cellar was ignited, and the three persons then tried to effect an escape. Cave's clothes were on fire, and he was very much burnt when he reached the street. Roberts was unable to escape from the cellar, where his dead body was found. The other boy received but slight injuries. At the inquest, Dr. Matthiessen, the lecturer on chemistry at St. Bartholomew's Hospital, gave important evidence as to the character of the Brunswick black. He said he had seen and examined a sample of the Brunswick black found in the front cellar. It was made of pitch dissolved in boiled oils and diluted with turpentine, or some of the petroleum products. The latter were sometimes cheaper. It would not ignite unless a light actually came in contact with it, or unless, being heated to 90 degrees, a light was held within an inch of it. [To demonstrate to the jury the accuracy of his statement the witness placed a quantity of the black in a cup, and held a light over it, and afterwards applied it to it. It only took fire when the light came in contact with it.] He had also tested the black that had caught fire, and some of the commonest sorts that could be procured, with the same result. He had come to the conclusion that by some means or other the Brunswick black had come in contact with the flame. The jury returned a verdict of "accidental death" in each case, but expressed through their foreman an opinion that it was highly dangerous to work in such confined places with an open light, and that safety-lamps should be used in premises containing materials of so combustible and inflammable a nature, adding that they regretted the law did not compel the use of such things.

On the 6th inst. a young man named James Johnstone died at Liverpool, it is said, from having improperly used a French medical preparation for the cure of a skin eruption.

A shocking accident occurred at the Stafford Railway Station on the 6th inst. On the arrival of the 6.14 train from Stoke, a man named Earley, a passenger travelling by the train, alighted. Two stone jars, unprotected by wicker-work, part of his luggage, were being handed from the guard's van to a porter named John Grant, when a piece from one of the jars flew out, and the contents, three gallons of vitriol, were discharged into the face and over the body of the unfortunate man. He was removed at once to the Stafford Infirmary, and he is expected to recover. Luckily the porter's cap protected his eyes; but he was shockingly burnt, and his clothes fell away from him. The man Earley was given into custody, by a county magistrate, for travelling with such articles in an unprotected state.

On the evening of the 23rd ult., a fire broke out in the chemical manufactory of Messrs. Hornby and Newham, Attercliffe. The fire was confined to one of the underground storehouses which contained great quantities of brimstone; it appears that a workman accidentally ignited the shed by a spark from a naphtha lamp. The damage done is estimated at £150. In addition to a large quantity of brimstone destroyed, more than a thousand gallons of vitriol were lost. Great difficulty was experienced in approaching the place during the fire in consequence of the fumes from the brimstone and sulphuric acid.

On the 20th ult., a fire broke out at the Naphtha Works, Hytho, but fortunately the damage it caused was not very serious.

CASES OF POISONING.

BY SULPHURIC ACID.

A domestic servant named Mary Ann Barry, residing at Cwmavon, near Neath, committed suicide on the 28th ult., owing to the rupture of a matrimonial engagement, by drinking a quantity of sulphuric acid. While suffering from the effects of fearful corrosive poison she ran to her former lover's house, and telling him what she had done died in his arms.

BY AMMONIA.

A woman named Ann Cartwright, residing at Dudley, accidentally poisoned herself, on the 19th ult., by drinking a quantity of caustic ammonia in mistake for paragoric. At the coroner's inquest, Mr. Fidler, surgeon, who made a post-mortem examination of the body, said the cause of death was the taking of an irritant poison, but death was certainly accelerated by the intemperate habits of the deceased. He would recommend that chemists should label ammonia as poisons although there was no act to compel them to do so.

BY OPIUM.

On the 14th ult. Mr. Bedford, Coroner for Westminster, held an inquest on the body of John Dillon, furniture dealer, of 2, Great Marlborough-street, who had been found dead in bed. The evidence showed that deceased indulged himself, to a large extent, by taking opium, and that for some time previous to his death, he was in very depressed spirits. He complained to his friends that he could not sleep, and said he should soon go mad for want of rest, but he never gave indications of any intention to commit suicide. Of late he had been a rather hard drinker, and the violence of his temper was such that his wife refused to occupy the same bed. Close by the body was found a bottle which had contained opium, and a tumbler, the dregs in which, when analysed, proved to be a mixture of opium and a spirituous liquor. A medical gentleman of the name of French, who had made a post-mortem examination, deposed that the cause of death was a dose of opium, strong enough to kill three persons. It might have been taken as a soporific. A verdict was returned in accordance with the medical supposition.

GOSSIP.

A medical gentleman had, during the past week, 13 persons under his care in the district of Liskeard, Cornwall, whose ages averaged 86 years. The youngest, aged 83, died.

At the Royal College of Surgeons, Professor Erasmus Wilson, F.R.S., has just completed a course of six lectures on Dermatology.

An inquest has been held at Burthwaite, near Carlisle, on the body of a boy who had been bitten by a dog on the 8th of last month, and who died of hydrophobia on the 2nd inst. The wounds had been cauterised.

A sum of about £1,400 has been subscribed, chiefly among men of science, towards the memorial to the late Professor Faraday. It is expected it will take the shape of a statue or monument in the British Museum.

A committee of the Society of Arts is now sitting for the purpose of taking measures to induce Her Majesty's Government to lower the rates of postage for the transmission of printed matter to one halfpenny for every four ounces weight of such matter.

The report of Dr. Letheby to the City Commissioners of Sewers indicates a satisfactory state of the public health. He has been requested to prepare for the information of the citizens instructions how to proceed in a sudden outbreak of cases of scarlet fever; and to append to his next report his opinion of Professor Tyndal's theory as to the value of respirators of cotton wool.

A paper on "The Determination of the Flashing Point of Petroleum" was read by Dr. Reynolds, at a meeting of the Royal Dublin Society, on the 17th ult. His opinion was that twenty-five minutes was the average time for rousing the oil to the flashing-point heat for testing purposes. An electric spark was the most genuine test for the flashing point, and by it an absolute standard of the quality of oil would be obtained.

An inquest was held on the 24th ult., at the King's Head Hotel, Change-alloy, Sheffield, on the body of Mr. James Moir, aged 55 years, who resided at Eccles, near Manchester, and who died suddenly at the above hotel on Saturday. The first witness examined was Mr. Radley, chemist, Sheffield, who deposed that he knew the deceased to be a traveller in the drug trade for the firm of H. A. Sampson, of London. After a brief consultation, the jury returned a verdict that the deceased "died by visitation of God."

At a meeting of the Liverpool Select Vestry, on the 20th ult., Mr. Glover, a brewer, made a vigorous attack on his brother tradesmen, whom he accused of largely adulterating, and thereby causing nearly all the lunacy which is caused by heavy drinking. The chairman admitted that the number of persons brought to the workhouse suffering from *delirium tremens* was very large. The clerk said, however, that these persons usually recovered after a few days of enforced abstinence.

On the 28th ult. a meeting of the trustees of the Andersonian University was held at Glasgow, in reference to the proposed endowment of £10,000 by Mr. James Young, of Kelly, for the establishment of a Chair of Technical Chemistry in connection with the university. This was the second time the matter had been brought forward, as at the previous meeting an allegation had been made that the proposed endowment would be an inroad on the vested rights of the existing professor of chemistry. After considerable discussion the managers were requested to intimate to Mr. Young their very high appreciation of the motives which led to his munificent offer to endow a Technical Chair; and they were instructed to open communication with the president on the subject, with the view of inducing him to make a proposition.

GAZETTE.

BANKRUPTS.

LINES, J. T., veterinary surgeon, Thorpe-le-Soken, Essex. Under the Act of 1861.

PACKARD, JOSEPH, surgeon and apothecary, Hoxne, Suffolk.

PARTNERSHIPS DISSOLVED.

ANSTEE, T. and J. chemists, Bath.

BURGOYNE, BURBIDGES, and SQUIRE, wholesale and export druggists and manufacturing chemists, 16, Coleman-street, London; as regards W. S. Squire.

CLOWES and HAMILTON, medical practitioners, Bowness and Windermere.

CURRIE and HUTCHINSON, chemists and druggists, Newcastle-on-Tyne.

DEAN, STEEL, and Co., 131, Fleet-street, London.

FORRESTER, THOMAS, and Co., dyewood millers, decoction makers, and chemical manufacturers, Cross-hall-mills, Chorley.

FOX and RHODES, surgeons, Weymouth.

GARMAN BROTHERS, surgeons, Kent-house, Bow-road.

ILEY BROTHERS, chemists and druggists, Old Shildon, Durham.

MARSHALL and EISEY, chemists, etc., Maldon, Essex.

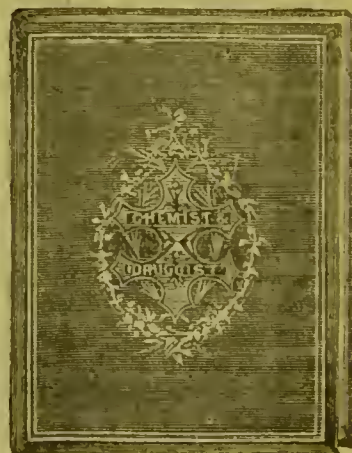
WALLWORK and MARSH, drysalers, Manchester.

MCANDREW and SCHRODER, surgeons, 125, Three-colt-street, Linchouse.

WYLEY, WYLEY, and BROWN, chemists and druggists, Coventry; as regards D. T. Brown.

Trade Memoranda.

In former days, when the CHEMIST AND DRUGGIST was half its present size, we supplied some reading-cases to hold six copies, which were much appreciated by many of our subscribers, who liked to keep their papers decently and in order. We have again requested a firm commanding artistic talent to furnish us with similar cases, adapted to our present size, and they have produced for us a very handsome specimen, a sketch of which we give in the accompanying engraving. These we are able to offer for half-a-crown each, and we shall be glad to have plenty of orders for them. If sent by post, they will be 3d. extra; but we would advise our readers to instruct us to send them to some wholesale house in London, which we will do with pleasure, and they will not be so likely to be injured in transit. It is hardly necessary to explain that besides their ornamental appearance, the advantage of being able to keep, in a convenient and tidy form, the six back numbers of our journal, if only for the purpose of referring to the



advertisements, must be of considerable value to our friends engaged in business, and we have no doubt they will appreciate it.

AUSTRALIAN MEAT.

It is certain that we are approaching the time when the almost boundless supplies of food which Australia and other lands are so anxious to dispose of will be brought within the reach of the crowded populations of Europe, who want it more and more every year. Since we have begun to think about the possibility of accomplishing this result, it is surprising how many and how various have been the plans adopted, how near success has appeared, and yet with what a steady and tantalising persistence some hitch has balked the most promising attempts. Within the past 150 years no less than 2,000 patents have been taken out for this object, and if it be necessary to take out 2,000 more, either chemistry or commerce, or both combined, will conquer eventually. As it is, the success which has been secured is of no mean importance. Mutton can be obtained in London, and is now imported in immense quantities at little more than half the price of English mutton, and this, if not a delicacy, is certainly sound and wholesome, and if properly prepared for the table, will satisfy the palates of all except the prejudiced. Chemists and druggists should see to this. They may largely aid in introducing it in the provinces, and if they do not, others will. Messrs. John McCall and Co., who are large importers, invite their co-operation. The mutton is sold, we believe, in 4lb. and 6lb. tins, the retail price being 8d. per lb. This, it should be remembered, is free from bone and after being cooked, thus showing a saving of at least 30 to 40 per cent. We should add that we have also received samples of a similar preparation from Messrs. W. J. Coleman and Co.

Of making many cocoas, indeed, there seems to be no end. The latest we have seen is that of Messrs. Mercer, Unsworth, and Bevan, who are makers of several other kinds, but are now pressing forward the "New" Cocoa. The consumption of cocoa in the United Kingdom is wonderfully increasing, the best qualities especially being in demand in the markets. It is bought in bond (duty 1d. per lb.) at prices varying from £2 to £6 per cwt., while twenty years ago it was employed as ballast for ships.

Mr. Steiner publishes a guarantee from Dr. Hassall, that his Vermin Paste does not contain any of the poisons included in the Pharmacy Act, understanding by this all the poisons which have been classed as such to this date by the Council of the Pharmaceutical Society.

The Stereoscopic Company have brought out some new dishes for their Chameleon Tins, noticed in this journal in December last, by means of which new effects are produced.

A leading article in the *Daily Telegraph* of February 7th, on the subject of curing colds, is worth perusal. It is reprinted in one of our advertisements this month.

The silver medal and diploma of the Paris Society of Arts has been awarded to the daughter of the late John Bond, for perfection in Marking Ink. The Queen of the Netherlands has also lately expressed her approval of the same preparation.

The proprietors of the "Yorkshire Relish," which is a capital sixpenny bottle of sauce with a tempting name, announce that since its introduction, only a few months ago, they have sold a third of a million bottles. An old proverb says, "the way to a man's heart is down his throat," and the same road seems to reach his pocket also.

Messrs. Tidman and Son have sent us a sample of Transparent Glycerine Soap manufactured by themselves, which well merits a word of praise for its first-class quality and for the handsome style in which it is finished. We also take this opportunity of calling the attention of the trade to Cathery's Dog Soap, for which Messrs. Tidman are agents, and which is a very saleable sixpenny packet of soap for washing dogs with, where fleas abound.

The annual report of the Runcorn Soap and Alkali Company (Limited) states that the directors have to congratulate the shareholders upon the success of the year's business. The depression both in the alkali and soap trade has continued throughout the year; but, owing to favourable contracts, the following results have been obtained:—The gross profits (including transfer fees) amount to £29,359 19s. 4d., and after providing for bad debts, losses on consignments, and all other expenses, there is left an available balance of £24,214 17s. 2d., which it is proposed to appropriate as follows:—Interim dividend of 10s. per share (already paid), £6,000; present dividend of £1 per share, £12,000; leaving a balance of £6,214 17s. 2d. to be carried forward.

At a recent meeting of the Gosport Chemists and Druggists' Association it was unanimously resolved that the secretary (Mr. J. Lawson Strachan) should write to us to suggest the advisability of a universal Poison Label for the trade.

The Americans have improved on a well-known old maxim in the following smart couplet:—

"He that in his biz would rise
Must either bust or advertise."



DISPENSING CHEMISTS, GREAT AND SMALL.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—“Why cannot you prepare this prescription?” is question daily put to the suburban chemist, and the reply invariably follows that there is nothing to prevent him if the opportunity is granted. “Then why am I told to take it to Mr. This or Messrs. That? It is very inconvenient to go, or send all that distance if you can dispense it; but why was I told to be sure to go to such a house if you can supply me with the medicine?” The chemist is able to give his version, which for once satisfies the mind of his customer; and is often able to explain, that in many instances under pretence of insuring good drugs, the prescriber is aiming at obtaining a percentage on the medicines. But alas! a visit is again made to the temple of Esculapius. “Well! are we progressing?” No! Ah! dear me! are you sure you can depend upon the chemist who prepares your prescriptions? Yes! Ah! No doubt, a very respectable man Mr. So and So is, I dare say; but we depend so much, my dear sir, upon the accuracy of the dispensing. Oblige me by taking it to Mr.—, of — street. *Then we shall be certain of what we are about.* Of truth, much must depend upon the purity of the drug for security and an effectual cure. And of truth the pharmaceutical preparations are apt to deteriorate more in the generality of chemists' shops, than at these giant houses, where there is a constant demand for them. But who is to blame? Certainly not the chemist. Who but the profession itself has brought this thing about, and rendered it a difficulty to obtain freshness of material at the ordinary chemists' in consequence of their directing their patients to a few favoured houses? The chemist commences his career in business by stocking his pharmacy with the purest materials and preparations of the most noted manufacturers; but by being surrounded by members of the Society of Apothecaries and the College of Physicians, who provide their own medicines, the greater part of his stock at the end of the year remains untouched; nor with the exception of a few family recipes, and his own retail, and recommendations, there has been no use for them. Prescriptions being a curiosity, and almost unknown to him, as a natural consequence the perishable articles become worthless; and too often, when by some chance a stray prescription turns up, pots and bottles lost to sight, and almost to memory, are recovered from some hidden recess, unfortunately to show the contents unfit for use. I am making this admission willingly, knowing that my statements support the plea for that practice which I condemn. But while ready to admit the truthfulness that

medicines cannot *always* be relied upon as those obtained from the large dispensers, I accuse the prescribers themselves of having brought such things about, and I ask them seriously to consider the question.

There is a vast difference between a physician requesting that care should be taken to have the prescription prepared at a respectable chemist's, to stating that such and such a house can only be relied upon for genuine articles. I am sure none of us would be so unreasonable as to question the right of a prescriber to exercise proper supervision over his patients' medicines, and even to condemn any pharmacy where he found imperfection in medicines, or their manipulations; but I do most unequivocally protest against the practice of creating mistrust *without a cause*, and of prescribing medicines as a rule, not contained in our recognised formulæ, and which can only be got of a certain individual. It is time, Sir, for the chemist to protest, when he sees the views of some medical men, not content with their fees, hiding their illicit acts under the cover of the imputed ignorance and rascality of the dispenser.

It may be, and has been, said that it is easy to complain of an evil, but not so easy to rectify it; and that time is required for the Pharmacy Act to produce benefits, which we do not now see even a shadow of. But, Sir, we are a corporate body. The whole trade is under the guidance of a committee of its members; and it is to that body we look for protection, and our remedy. Are we in a fair way of obtaining assistance from our managers? or have they not exhibited, up to the present time, more eagerness to hamper or fetter us with unnecessary restrictions, than of striking out a path which would raise the chemist to independence? The opinions I expressed before the last election of the Council, I still hold with increased conviction that the *trade at large is not represented* in the Council's deliberations. One element alone prevails. The sympathy of these, our law makers, is confined to a section of us. The wants of the country trade are not known, or if known, not advocated. Seemingly, the object of the Council is to carry out such arrangements as will meet with the approbation of the medical authorities, and those dispensers connected with them. We have been accustomed to a fanciful and poetic idea, that "Pharmacy is the hand-maid to the healing art," to which I have no objection, but I certainly do not like to see pharmacy made the jackal for the more majestic professional animal; and it is strange to my mind, if the desire to abolish the patent stamp did not originate with those, whose practice is more injured by quack medicines, than by the chemists who live by them. The country chemist and the general druggist have no voice in the governing Council, and the time is before us for providing on the next Council men who are types of the trade at large. The time is past for the merit of a Councillor to consist of "membership from the first." Those who wish to govern must show themselves ready to advance with the times, and take up the wishes of the people; and I hope that every member will interest himself in the forthcoming election.

Of what use is the Society, if not to protect its members from illegal, persecutions and unrighteous falsifications? And yet we find, in various parts of the country, chemists being persecuted by justices, ignorant of the law, and having to defend, at their own cost, appeals to higher courts. Pray, Sir, use the power of your pen to aid us, lest we "drop" into the position which your esteemed contemporary, the *Pall Mall Gazette*, desires for us, and which is usually assigned as the fate of the poor dog, to whom a bad name is given.

I am, Sir,

Yours faithfully,

JOHN WADE.

February 9, 1870.

P.S.—In the *Pharmaceutical Journal* for this month there appears, "Regulations to be observed in Selling and Dispensing Poisons," which are supposed to contain all the requirements of the Act. In relation to the dispensers' liabilities, it is stated that every prescription dispensed, and containing any article in Part 1 or 2 of the poison list, must be entered in a "prescription book," with the "name" of the person to whom it is sold or delivered, "and the name and address of the dispenser." Nothing is here stated as to the address of the purchaser, and yet the secretary, in giving evidence before Mr. Knox against Mr. McCall, is

reported to have said, "the defendant did not know his (prosecutor's) name *nor address*." It is either necessary or not, but it is very important to know whether the requirements are clear and explicit, or whether they still require amendment.

PRESCRIBING AND DISPENSING.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I read Mr. Wade's excellent letter in your last issue with pleasure and admiration; with pleasure because, to a great extent, my views coincided with his; with admiration because I could not but reverence a spirit evidently more generous than I can ever hope to attain. I am not accustomed to writing as Mr. Wade is, but I read most of the publications connected with the trade, and really I am getting a little weary of the undying complainings which my brother pharmacists publish. I suppose, Sir, you only print a portion of those which reach you, these being, we may assume, the most reasonable; but I know, from personal intercourse, that numbers of chemists and druggists lead a life of constant torture on account of some grievance or another. Now all I want to do, and I hope I have arrived at my point with sufficient clearness, is to give a practical business application to the fable of Hercules and the Waggoner, which has lately been introduced into pharmaceutical literature under the highly respectable auspices of Messrs. Schacht and Ince. Hercules is just as likely to help us in getting our living as the members of the medical profession, and I should just as soon think of asking him. But why trouble ourselves to ask either? When a doctor finds it to his own interest to discontinue dispensing his medicines, he will leave off the practice, and the character of the neighbouring chemist's business will improve in consequence. But the human nature of the medical profession is not the stuff I take it to be, if our piteous appeals move them to relinquish a profitable part of their practice merely to benefit us. Now is the old

"—— Robbers' simple plan,

That they should take who have the will,

And they should keep who can,"

answers with our betters, as, indeed, it is pretty nearly the general principle which guides the transactions of all the world, why should not we adopt it also? The fact is we do, but some of us make ourselves very miserable about it, and write and talk and act as if we were doing a very disgraceful thing in prescribing at the counter when we are asked to do so. To some people the practice may appear criminal, and no man ought to act against his conscience. Taking Mr. Wade as an example, for he has come forward publicly on the question, I say he, and others who think exactly with him, are doing wrong whenever they meddle with counter-prescribing. *Qui s'excuse, s'accuse*, is a principle which seems to me to settle Mr. Wade's guilt; and, for the sake of his own peace of mind, I would recommend him to drop prescribing. For my own part, I am perfectly comfortable on the matter. When I went into business I saw but poor prospects for the cultivation of a good dispensing business, so I plunged boldly into the prescribing, doing what I did to the very best of my ability, and gradually winning confidence. I never suffered a single twinge of conscience for acting thus, but I have often felt a glow of honest satisfaction when, for a shilling, I have given a poor person some medicines for which he would have to pay three or four times as much at my neighbour the surgeon's, who could not have given him anything better. The attitude of doctors towards chemists, as a rule, is not encouraging, but I am sure we shall do no good by bewailing in their ears our misfortunes; and if we are to engage in battle with them, I think it only fair that we should take our share of the kicking, and not submit to all the suffering.

One word with regard to the Co-operative Stores. This is an uglier business than the other, I admit; but the same principle will to some extent apply here. At present we are getting the worst of it, and I do not exactly see how we can help ourselves by face-to-face fighting. Let us, therefore, attack our Civil Service friends on the flank by agitating on every opportunity for the application of economy and retrenchment in all Government departments. If the trades-

men of England were to co-operate in this matter, they would make a considerable number of the Civil Service gentry appear "penny wise and pound foolish."

Yours, etc., M. P. S.

CO-OPERATIVE STORES.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—Hearing that some misapprehension exists as to our name having been used in connection with Co-operative Stores, we should be glad if you would permit us to state through your columns that we have no connection whatever with either of the stores, Civil Service or otherwise; and we refuse to supply goods to any person known to have obtained goods for the use of such stores.

We are, Sir, your obedient servants,
FRAS. NEWBERRY AND SONS.

Wholesale Patent Medicine Vendors.
44 and 45, St. Paul's Churchyard, Feb. 8.

AN APPEAL TO THE BENEVOLENT.

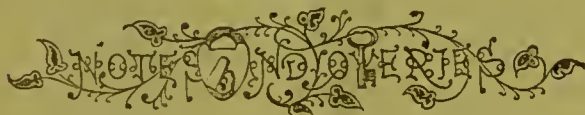
TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—I have to express my thanks to you for inserting my appeal to the benevolent in your last impression. The result is as follows, that by the charity of a few subscribers (to whom I have individually expressed my obligations) I have received and disposed of £1 8s. This amount, however acceptable, is wholly inadequate to the purpose contemplated. May I again trespass on your space by remarking that both Mr. Jackson and myself will be very happy to transmit on application further particulars of the case, and to take charge of any additional contributions.

I am, sir,

Your obedient servant,
RICHARD CHANDLER.

2, Bucklersbury, London, E.C., Feb. 14, 1870.



B. J. B. C. (Leeds) is referred to the Regulations drawn up by the Pharmaceutical Council, and printed on another page.

Ignoramus.—Syrupus Rubi Idæi is syrup of raspberries. It is prepared in the same manner as Syrupus Mori. See the printed Regulations.

CEMENT FOR GLASS.—*Economist* desires a good receipt for a cement that is not affected by tinctures, spirits of camphor, and similar preparations, and specially adapted for mending cracked glass. We have been informed that a cement made by beating the curd of skimmed milk into a paste with quicklime has the qualities indicated by our correspondent. The curd may be obtained from the milk by the addition of acetic acid. We shall be glad to receive a formula for a spirit-resisting glass cement that has been practically tested.

REMOVING BLACK STAINS FROM PAPER.—In *Notes and Queries*, Mr. H. N. Draper, of Dublin, informs a correspondent that he will certainly be successful with a solution of one or other of the following salts applied with a hair pencil: oxalate of ammonia, chlorinated lime, cyanide of potassium. If oxalate of ammonia be used the solution should be warm, and the employment of the cyanide is only advised in the event of failure with the other two substances, as it is extremely poisonous. When the ink has been removed, the paper must be carefully washed in water and dried.

CHEMICAL MANUAL. S. G. P.—Mr. Gill's "Chemistry for Schools," published by James Walton, price 4s. 6d. This is an admirable elementary text-book, well supplied with questions and examples.

ANTI-CORROSIVE PAINTS. Bolus (New Milford) will thank any of our readers if they will give him their experience of Carson's Anti-Corrosive Paints. He wishes to know whether they answer as well or better for retail than paints ground in oil.

A *Chemist and Druggist*, who refers to the supply of goods to co-operative stores by wholesale houses, has made an assertion that needs proof.



[The following list has been compiled expressly for the *CHEMIST AND DRUGGIST* by L. de Fontainemoreau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 3, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

- 2744. J. Jacobi, of Kladno, Bohemia. An improved process for removing phosphates from ores, and for utilising these phosphates. Dated 21st September, 1869.
- 3355. T. F. Lynch, of Aldersgate-street. Improvements in bottles for holding poisons and other preparations. Dated 20th Nov., 1869.
- 3522. T. Prideaux, of Sheffield. Improvements in purifying and calcining gas and soap limos and other chemical refuse of lime which has been used in the manufacture of such articles. Dated 6th Dec., 1869.
- 3556. H. Byk, of Leipsie, Saxony. Improvements in refining and bleaching paraffin. Dated 9th December, 1869.
- 3581. A. A. Croil, of Coleman-street. Improvements in the treatment of ammoniacal liquor of gasworks, to obtain therefrom salts of ammonia. Dated 11th December, 1869.
- 3645. A. M. Clark, of Loudon. Improvements in the manufacture of superphosphate of lime. Dated 16th December, 1869.
- 3662. W. E. Gedge, of Loudon. An improved system of pessary. Dated 18th December, 1869.
- 3684. E. T. Hughes, of Loudon. Improved garments to be worn next the skin for sanitary purposes. Dated 20th December, 1869.
- 3707. H. Bessemer, of Queen-street-place, Cannon-street. Improvements in the construction of steam vessels and sailing vessels, and in the means and apparatus employed for lessening or preventing sea-sickness on board such vessels. Dated 22nd Dec., 1869.
- 3708. G. Fuller, G. Spencer, and E. Martin, all of Horselydown, Surrey. Improvements in feeding bottles, and in the stoppers and fittings thereof, part of which improvements are also applicable to other purposes. Dated 22nd December, 1869.
- 3745. E. P. H. Vaughan, of Loudon. Improvements in the manufacture of fluoride of potassium and sodium, and of hydrate and carbonate of potash and soda. Dated 27th December, 1869.
- 3752. G. Spencer, of Cannon-street. Improvements in the construction and conformation of certain machinery and apparatus and processes for the preservation of animal and vegetable substances, parts of which may be applied to other useful purposes. Dated 28th December, 1869.
- 46. J. Hargreaves and T. Robinson, both of Widnes, Lancaster. Improvements in treating sulphur, sulphide of hydrogen, pyrites, and other compounds of sulphur, and in obtaining products therefrom. Dated 6th January, 1870.
- 50. G. Shand, of Stirling, North Britain. Improvements in obtaining products from mineral and vegetable tars, and from certain of their distillates and residues. Dated 6th January, 1870.

Letters Patent have been issued for the following:—

- 1936. H. Caro, of Mannheim, Baden, and C. Graebe and C. Liebermann, of Berlin. Improvements in preparing colouring matters. Dated 25th June, 1869.
 - 2012. A. H. A. Durant, of Shepherd's Bush. Improvements in the mode or means of preparing or treating castor and other oleaginous seeds or berries for the manufacture of oil from the seeds or berries so prepared or treated. Dated 3rd July, 1869.
 - 2041. D. Cope, of Liverpool. Improvements in apparatus to prevent waste of liquids in filling casks. Dated 7th July, 1869.
 - 2046. A. B. Price, of Lincoln's Inn-fields. Improvements in producing partial or complete anaesthesia. Dated 7th July, 1869.
- Specifications published during the month. Postage 1d. each extra.
- 1441. C. D. Abel. Galvanic batteries. 8d.
 - 1468. T. G. F. Dolby. Valve for admitting air to feeding bottles, &c. 8d.
 - 1469. J. Townsend and P. Forbes. Refining oils and fats. 10d.
 - 1471. J. Fawcett. Apparatus for measuring oil, &c. 10d.
 - 1472. C. Ferguson. Washing, brushing, filling, and corking bottles, &c. 1s. 10d.
 - 1550. W. M. Moore. Caps or covers for bottles, &c. 4d.



THE commercial history of the past month has not been altogether uneventful, although in general matters there has not been much which calls for comment from us. As we have in this column, on more than one occasion, expressed our opinions on the discussions of the past year between Free Trade and so-called Reciprocity, we may allude with satisfaction to the evidence and promise of triumph indicated in the recent debates of the French Corps Legislatif. That the leading statesmen of France are firmly convinced of the importance and mutual advantage of removing every

impediment from the exercise of commercial relations with other countries, is one of the most hopeful signs of the times. When this enlightenment spreads throughout Europe and America, as assuredly it will do, not only will the internal resources of all lands become more completely developed, but we shall have the strongest possible guarantee of the preservation of peace, the guarantee which self-interest alone can give.

Before passing to the consideration of the drug markets, we would call the attention of our readers to an important decision of the Chief Judge in bankruptcy, lately reported. The case was Pullen *ex parte* Williams. The application was for the cancellation of the registry of a deed of composition executed by the bankrupt, Pullen, the ground of complaint, according to the facts stated in the judgment, being that the bankrupt could pay 7s. in the pound, and only offered to pay 1s., and that this was unjust, so as to make the deed invalid. The Chief Judge most emphatically adopted the view of the applicant. The law, he said, enabling a majority of creditors to accept a composition and bind a dissentient minority, assumed, as an essential condition to the validity of such an arrangement, that it shall be in all respects just, and shall not have "any taint of fraud, whether it consists in concealment, misrepresentation, inequality, or injustice." Creditors so favourably disposed to the debtor as to accept terms without inquiring were incompetent to bind the others, who take a more strict view of their own rights. Generosity could not be practised at other people's expense. Such is the Chief Judge's opinion. Strictly read it amounts to this—that no composition deed is binding which secures to the creditors a less dividend than could be paid. The Chief Judge, it is true, speaks of dividends "grossly disproportionate" to the bankrupt's means, but his language is sufficient to cover any appreciable discrepancy. One set of creditors can have no more right manifestly to release a debtor from a penny in the pound on their fellow-creditors' debts than they have to release him from the whole 20s.

The first drug sales of the year 1870 were held on the 20th and 21st of January, and were remarkable for the large quantity of drugs brought forward, as well as for the fair amount of spirit manifested by buyers. Opium has advanced from 3s. to 4s. per lb., and seems still firm. We also note advanced quotation for Camphor; but as the stock of this gum is still very large, it is hardly likely to be maintained. Castor Oil is a shade in favour of buyers. Good dry Socotrine Aloes are still much wanted, as also are Gum Ammoniacum, Assafoetida, and Olibanum. There is a ready sale for the better qualities of Gum Arabic; but at present we have a large supply of insoluble or Ghatty Gum, which we do not want. A large and speculative business has been done in Shellac, at advancing prices; holders are generally very firm; the stock is 12,672 chests against 9,640, on February 1st, 1869. About 4,427 chests against 3,773 last year. Rhubarb: some old importations have been brought forward which made improved rates. There have been large arrivals of Turmeric. Cardamoms of the various growths are in good demand. Tinnevely Senna is dearer and very scarce; all qualities wanted. Mace is steady at the late advance, and Ginger of fine quality is in much request.

French Quinine is a little higher, and that of English manufacture is firm. Citric Acid is quoted 1d. less, and Iodide of Potash 6d. higher. Pearl and Potashes have advanced 3l., and Sulphate of Ammonia exhibits a decline.

DRUG ALTERIES.—Galls: At the sale held 21st ult. fifty-six cases fair stalky Japan sold at 43s. 6l., fifty cases China were bought in at 50s., but the like quantity has been sold since at 49s. 6d. to 50s. On the 1st February fifty cases Japan were held for 51s., and 236 cases China for 50s. Lac Dye: Sales are limited, and out of about 900 chests offered very little sold; the late sales met with scarcely any bids, and some of the principal marks were bought in. Safflower has been drooping all the year, but more so of late and our highest quotation is now £13 10s.; about 550 bales of Bengal have been at auction, of which the bulk sold, but prices were fully £2 lower than at the close of last year; in the middle of last month, when 113 bales were offered, common fair colour a little loose sold at £10 to £10 2s. 6d., and some fine W and G with A underneath at £13 to £13 12s. 6d.; of 146 bales Persian only a little sold, and was mostly bought in at 60s. to 65s., except three bales of good, which

sold at 75s.; some loose has been sold as low as 58s. Argol, Cape: 20 boxes small red 75s., 58 bags small and dusty to good white 80s. to 85s., bought in. Turmeric, Bengal: Of 4550 bags at auction very little sold, the bulk being bought in at 21s. 6d. to 21s. 9l., and 250 bags of old import sold at 21s. 3d. to 21s. 6l. Madras 21 bags rather rough coated and lean sold at 27s. 6l. Cochin: Of 1206 bags and 463 pockets, about one half sold at 14s. to 15s. for split hulbs. Sapan Wood has been in rather better demand, 118 tons have been brought to auction, of which 43 tons were sold under the hammer, at £7 5s. to £9 5s. for stained and dirty, up to £3 15s. for slightly dirty; remainder bought in at £9 per ton. Red Saunders Wood is much wanted. 73 tons offered last month were held for £8. Gambier has been in more demand, and prices are rather higher. 1836 bales, 1000 baskets and 467 mats have been at sale, of which very little sold at the time of offering. Some middling cubes in mats brought 18s. 6d., and good in baskets 19s. 6l. to 20s.: last week fine pale cubes sold at 20s. 3d. to 20s. 6d., and privately some business has been done of late at 20s. to 20s. 6d. for fine pale, and 18s. 6d. for good pressed cubes. For arrival about 250 tons have been sold at 17s. 1½d. to 17s. 6d. for common, without guarantee of quality. Stock 3460 tons against 3530 tons in 1869. Cutch: 1470 packages were brought to auction in January, when low Calcutta sold at 16s., and good 14s. 6l. to 26s. 6d., good Pegne being held for 36s. 6d., and Penang 27s. Last week 164 boxes fine Pegne were bought in at 27s. Stock, 31st January, 1869, tons against 1232 tons last year. Sulphur has been in improved demand, and a rather large business done of late, and a further advance has been obtained this week; the latest transactions are 8 per cent. at 22s. 6d. with prompt, 3½ to 4½ per cent. at 23s. to 22s. 3d. cash; for arrival 100 tons Bengal sold last week at 23s. 3d. usual terms, and so far this week 76 tons 10 per cent. 22s. 6l. per cwt. Stock, 4236 tons against 3473 tons in February, 1869.

OILS.—Linseed has been firm, mostly at £31 on the spot, but the market has been quiet. Hult has been steady, but without much activity at £29 15s. and at £30 5s. for the month. Ripe has not attracted much attention, and at one period £41 10s. was taken for good English brown on the spot, but since then the demand has improved, and £42 has been paid; February-April sold at £42, March at £42, May-August at £41; but higher rates are now demanded in all positions. Refined has been sold at £44, and foreign £45 10s. to £46. A good business has been done in Madras Ground Nut Oil at £40 to £41 on the spot, chiefly at the former price, and at £40 10s. to arrive. Only limited sales of Refined Cotton have been made, but for some fine £37 10s. was obtained, and £32 for new crude. Olive Oils have moved off slowly, and no transactions worth mentioning have occurred; a moderate quantity of Mogador offers at £54, but holders are firm at previous rates for other descriptions. Fine Cochin Cocunut has continued in good demand, and a fair amount of business has been done on the spot at £45 10s., and even £46 is reported to have been paid, and at £45 to £45 10s. for arrival, the latter price having been paid for 100 hogsheads December shipment. Ceylon, however, has been stationary at £42 to £42 10s., and fine Sulu at £40. Thirty-three casks Ceylon yellow to good offered by auction sold at £42, forty-nine drums from Singapore bought in at £41, of forty-two casks Padang three casks sold at £40. Palm has moved off slowly, and fine Lagos has been obtainable at £10 10s., 226 casks offered by auction chiefly sold, Acra, good fair to fine £34 to £35 10s., ordinary to middling £35 10s. to £37, Coast Oil middling to good £36 10s. to £37 10s., low middling and ordinary £35 5s. to £36, low £30 15s., Sierra Leone common to good £35 to £38 5s. Spermin has been in more request, and sales have been effected at £89 to £90. In Waste and Cold no change has taken place, but Seal is in demand, and is higher, at £35 to £43 for brown to pale.

PETROLEUM has again been in less demand, but there has been little change in prices; sales have been limited at 1s. 9½d. to 1s. 10½d. as to test. Our stock is 7,837 barrels and 16,092 cases, and the deliveries last week were equal to 1,807 barrels against 12,228 and 1,549 respectively same time last year. Refined Coal Oil offers at 1s. 4l. to 1s. 8l. as in quality, and retail sales of Naphtha have been made at 1s. 5d. per gallon. 1,500 gallons Benzole sold without reserve at 3s. per gallon.

Monthly Price Current.

[The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.	1870.				1869.			
	s.	d.	to	s. d.	s.	d.	to	s. d.
ACIDS—								
Acetic .....per lb.	0	4	..	0 0	0	4	..	0 0
Citric .....per lb.	2	3½	..	2 4	2	9	..	2 10
Nitric "	0	5	..	0 5½	0	5	..	0 5½
Oxalic "	0	7½	..	0 0	0	8	..	0 0
Sulphuric "	0	0½	..	0 1	0	0½	..	0 1
Tartaric crystal .. "	1	2½	..	1 2½	1	2½	..	1 2½
powdered .. "	1	2½	..	1 2½	1	2½	..	0 0
ANTIMONY ore.....per ton	320	0	..	360 0	280	0	..	300 0
crude ..per cwt	36	0	..	0 0	23	0	..	26 0
regulus.. "	65	0	..	68 0	48	0	..	50 0
star "	65	0	..	68 0	48	0	..	50 0
ARSENIC, lump..... "	16	0	..	16 6	16	0	..	16 6
powder..... "	7	3	..	7 6	7	6	..	8 0
BRIMSTONE, rough ..per ton	160	0	..	0 0	160	0	..	165 0
roll ....per cwt	11	0	..	0 0	12	0	..	0 0
flour..... "	13	0	..	13 6	14	0	..	14 6
IODINE, dry .....per oz.	0	9	..	0 9½	0	9½	..	0 10
IVORY BLACK, dry..per cwt.	0	0	..	0 0	0	0	..	0 0
MAGNESIA, calcined..per lb.	1	2	..	0 0	1	6	..	1 8
MERCURY..... per bottle	137	0	..	133 0	137	6	..	0 0
MINIUM, red .....per cwt.	20	9	..	21 0	20	9	..	21 0
orange "	31	6	..	32 6	31	9	..	32 6
PRECIPITATE, red ..per lb.	2	6	..	0 0	2	6	..	0 0
white .. "	2	5	..	0 0	2	5	..	0 0
PRUSSIAN BLUE .. "	0	0	..	0 0	1	0	..	1 10
SALTS—								
Alum .....per ton	145	0	..	155 0	150	0	..	155 0
powder "	165	0	..	170 0	170	0	..	175 0
Ammonia:								
Carbonate ..per lb.	0	5½	..	0 6	0	5½	..	0 6
Hydrochlorate, crude, white..... per ton	480	0	..	560 0	500	0	..	510 0
British (see Sal Ammoniac)								
Sulphate .....per ton	335	0	..	355 0	330	0	..	340 0
Argol, Cape .....per cwt	65	0	..	78 6	70	0	..	85 6
France "	45	0	..	58 0	45	0	..	60 0
Oporto, red .. "	22	0	..	24 0	24	0	..	25 0
Sicily .. "	32	0	..	40 0	45	0	..	50 0
Naples, white .. "	0	0	..	0 0	55	0	..	65 0
Florence, white .. "	0	0	..	0 0	70	0	..	75 0
red .. "	0	0	..	0 0	60	0	..	65 0
Bologna, white .. "	0	0	..	0 0	0	0	..	0 0
Ashes (see Potash and Soda)								
bleaching powd..per cwt.	8	6	..	8 9	10	9	..	11 0
Borax, crude "	25	0	..	40 0	25	0	..	35 0
(Tinical) .. "	55	0	..	65 0	30	0	..	52 0
British refnd. .. "	68	0	..	70 0	68	0	..	70 0
Calomel .....per lb.	2	5	..	0 0	2	5	..	0 0
Copper:								
Sulphate .....per cwt.	23	6	..	24 0	25	6	..	27 0
Copperas, green ..per ton	52	6	..	60 0	57	0	..	60 0
Corrosive Sublimate..p.lb.	1	11	..	0 0	1	11	..	0 0
Cr. Tartar, French, p. cwt.	82	0	..	0 0	85	0	..	0 0
Venetian grey .. "	83	0	..	0 0	0	0	..	0 0
brown .. "	0	0	..	0 0	70	0	..	72 6
Epsom Salts .....per cwt.	7	6	..	8 0	8	0	..	8 6
Glauber Salts .. "	4	6	..	6 0	5	6	..	6 0
Lime:								
Acetate, white, per cwt.	12	6	..	23 0	12	6	..	25 0
Magnesia:								
Carbonate..... "	42	6	..	0 0	42	6	..	0 0
Potash:								
Bichromate ....per lb.	0	5½	..	0 5½	0	5	..	0 0
Carbonate:								
Potashes, Canada, 1st sort .....per cwt.	31	9	..	32 0	32	0	..	0 0
Pearlasbes, Canada, 1st sort .....per cwt.	32	9	..	33 0	32	0	..	0 0
Chlorate .....per lb.	0	10½	..	0 10½	1	0	..	0 0
Prussiate .....per lb.	0	11	..	0 0	1	0	..	0 0
red .. "	1	8½	..	1 10	1	9½	..	1 10
Tartrate (see Argol and Cream of Tartar)								
Potassium:								
Chloride .....per cwt.	8	0	..	0 0	8	0	..	8 3
Iodide.....per lb.	12	0	..	0 0	11	6	..	0 0
Quinine:								
Sulphate, British, in bottles .....per oz.	5	10	..	6 0	5	6	..	0 0
Sulphate, French .. "	5	7	..	0 0	5	4	..	5 2
Sal Acetos .....per lb.	0	10	..	0 0	0	10½	..	0 0
Sal Ammoniac, Brit. cwt.	39	0	..	40 0	36	0	..	38 0
Saltpetre:								
Bengal, 6 per cent. or under .....per cwt.	22	9	..	23 3	24	3	..	24 6
Bengal, over 6 per cent. per cwt.	21	0	..	22 6	23	9	..	24 6
Madras..... "	20	0	..	21 0	0	0	..	24 0
Bomb. & Kurrachee p.ct.	0	0	to	0 0	0	0	..	0 0
European..... "	25	0	..	26 0	0	0	..	0 0
British, refined .. "	26	0	..	26 6	29	6	..	30 0
Soda: Bicarbonate, p.cwt.	9	9	..	0 0	11	6	..	0 0
Carbonate:								
Soda Ash.....por deg.	0	13½	..	0 0	0	13½	..	0 0
Soda Crystals por ton	77	6	..	0 0	58	0	..	0

Soda:	1870.				1869.			
	s.	d.	..	s. d.	s.	d.	..	s. d.
Hyposulphite..per cwt.	13	6	..	14 0	18	0	..	0 0
Nitrate .. "	16	0	..	16 3	15	3	..	15 6
SUGAR OF LEAD, White, cwt.	39	0	..	40 0	40	0	..	42 0
Brown .. "	26	0	..	28 0	19	0	..	30 0
SULPHUR (see Brimstone)								
VERDIUM .. per lb.	1	0	..	1 2	0	11	..	1 0
VERMILION, English..por lb.	2	4	..	2 6	2	6	..	3 0
China..... "	2	10	..	0 0	2	6	..	0 0

DRUGS.

ALOE, Hepatic....per cwt.	60	0	..	180 0	90	0	..	190 0
Socotrine .. "	100	0	..	220 0	140	0	..	270 0
Cape, good.. "	23	0	..	30 0	29	0	..	32 0
Inferior .. "	17	0	..	27 0	16	0	..	28 0
Barbadoes .. "	80	0	..	220 0	70	0	..	190 0
AMBERGRIS, grey..... oz.	27	6	..	30 0	27	6	..	32 6
BALSAMS—								
Canada .....per lb.	1	2	..	0 0	1	3	..	0 0
Capivi .. "	1	10	..	1 11	1	9	..	1 11
Peru .. "	9	6	..	0 0	11	6	..	12 0
Tolu .. "	2	2	..	2 3	2	6	..	0 0
BARKS—								
Canella alba ....per cwt.	20	0	..	34 0	35	0	..	50 0
Cascarilla..... "	22	0	..	34 0	23	0	..	35 0
Peru, crown & gray per lb.	0	10	..	2 3	0	10	..	1 10
Calisaya, flat .. "	3	9	..	3 11	2	10	..	3 2
quill .. "	3	9	..	3 10	2	8	..	2 10
Cartbagenia .. "	1	0	..	1 11	0	10	..	1 6
Pitayo "	0	6	..	1 5	0	7	..	1 4
Red .. "	1	6	..	7 0	4	0	..	9 0
Buchu Leaves .. "	0	3	..	0 6	0	2	..	0 8
CAMPHOR, China.. per cwt.	82	0	..	85 0	130	0	..	132 6
Japan .. "	85	0	..	87 6	132	6	..	0 0
Refin Eng. per lb.	1	3	..	0 0	1	8	..	0 0
CANTHARIDES .. "	3	0	..	3 2	2	2	..	2 3
CHAMONILE FLOWERS p. cwt	40	0	..	72 6	60	0	..	100 0
CASTOREUM .....per lb.	4	0	..	32 0	5	0	..	32 0
DRAGON'S BLOOD, reed p. ct.	100	0	..	160 0	100	0	..	200 0
lump .. "	100	0	..	200 0	100	0	..	220 0

FRUITS AND SEEDS (see also Seeds and Spices.)

FRUITS AND SEEDS (see also Seeds and Spices.)										
Anise, China Star pr cwt.	115	6	..	120	0	97	6	..	102	6
German, &c. "	25	0	..	38	0	30	0	..	38	0
Beans, Tonquin .. per lb.	1	0	..	1	6	1	2	..	1	6
Cardamoms, Malabar										
good .. "	7	10	..	8	6	10	6	..	10	6
inferior .. "	5	9	..	7	0	6	0	..	9	0
Madras .. "	4	6	..	3	4	5	9	..	10	3
Ceylon .. "	2	6	..	2	10	2	10	..	3	0
Corozo Nuts.... per cwt.	14	0	..	18	0	12	0	..	16	0
Cassia Fistula..	16	0	..	35	0	15	0	..	28	0
Castor Seeds ..	10	6	..	12	0	11	0	..	13	0
Cocculus Indicus ..	21	0	..	22	0	24	0	..	26	0
Colocynth, apple.. per lb.	0	4½	..	0	8	0	5	..	0	10
Croton Seeds .. per cwt.	45	0	..	55	0	82	0	..	86	0
Cubebs	32	0	..	35	0	40	0	..	41	0
Cummiu	90	0	..	100	0	40	0	..	41	0
Dividivi	10	6	..	12	6	10	6	..	12	6
Fenugreek.....	12	0	..	17	0	11	0	..	16	0
Guinea Grains ..	36	0	..	0	0	38	0	..	40	0
Juniper Berries ..	7	6	..	8	6	7	0	..	8	0
Myrobalans	7	0	..	14	6	11	0	..	17	0
Nux Vomica.....	10	0	..	14	0	12	0	..	15	0
Tamarinds, East India ..	9	0	..	14	0	26	0	..	32	0
West India, new ..	12	0	..	22	0	16	0	..	30	0
Vanilla, large per lb.	24	0	..	32	0	10	0	..	16	0
inferior .. "	12	0	..	22	0	5	0	..	9	0
Wormseed .. per cwt.	35	6	..	0	0	25	0	..	31	0
GINGER, Preserved, in bond (duty 1d. per lb.) per lb.	0	6	..	0	8	0	6	..	0	10
GUMS (see separate list)										
HONEY, Narbonne ..	30	0	..	47	0	0	0	..	0	0
Cuba	22	0	..	36	0	21	0	..	36	0
Jamaica..	31	0	..	55	0	25	0	..	45	0
IPECACUANHA	5	6	..	6	0	6	0	..	6	3
ISINGLASS, Brazil..	2	6	..	4	5	3	2	..	4	2
Tongue sort ..	3	1	..	4	10	3	6	..	5	1
East India ..	2	0	..	3	11	2	3	..	4	1
West India ..	3	10	..	4	1	3	8	..	4	0
Russ. long staple ..	5	0	..	8	0	5	6	..	7	0
leaf ..	3	0	..	5	9	0	0	..	0	0
Simovia ..	1	6	..	2	6	1	6	..	2	6
JALAP, good	3	2	..	3	10	3	9	..	4	3
infer. & stems ..	0	6	..	3	0	0	9	..	3	6
LEMON JUICE ... per degree	0	1	..	0	1½	0	1	..	0	1½
LIQUORICE, Spanish per cwt.	60	0	..	65	0	63	0	..	68	0
Italian ..	48	0	..	63	0	48	0	..	67	0
MANNA, flaky per lb.	3	6	..	4	6	3	0	..	3	6
small.....	2	0	..	2	6	1	6	..	1	9
MUSK..... per oz.	17	0	..	33	0	22	0	..	34	0
OILS (see also separate List)										
Almond, expressed per lb.	1	2	..	0	0	1	3	..	0	0
Castor, 1st pale	0	5	..	0	0	0	6½	..	0	6½
second	0	4½	..	0	4½	0	5½	..	0	6
infer. & dark ..	0	4½	..	0	0	0	4½	..	0	5
Bombay (in casks)	0	4	..	0	0	0	4½	..	0	0
Cod Liver	5	0	..	6	3	4	0	..	6	6
Croton..... per oz.	0	3	..	0	4	0	3	..	0	4
Essential Oils:										
Almond	42	0	..	0	0	40	0	..	0	0
Anise-scod	8	10	..	9	0	9	3	..	9	6
Bay	65	0	..	70	0	70	0	..	80	0
Bergamot	8	0	..	14	0	12	0	..	23	0
Cajuput, (in bond) per oz.	0	1½	..	0	2	0	1½	..	0	2
Caraway	5	1	..	6	3	5	3	..	5	6
Cassia	5	1	..	5	3	5	6	..	5	8
Cinnamon	1	0	..	4	6	1	0	..	4	6

1870.				1869.				1870.				1869.			
Essential Oils, continued:—								Oils, continued:—							
	s.	d.		s.	d.			£	s.	£	s.	£	s.	£	s.
Cinnamon-leaf . . . per oz.	0	4	0	0	0	0	0	COD	30	0	0	0	0	39	10
Citronelle	0	2½	0	2½	0	2½	0	WHALE, South Sea, pale	30	0	0	0	0	38	0
fine	0	3	0	0	0	3½	0	yellow	37	0	38	6	0	37	0
Clove per lb.	2	7	0	0	2	8	0	brown	36	0	0	0	0	33	6
Juniper	1	9	0	2	0	1	9	East India, Fish	32	0	23	0	0	31	0
Lavender	3	0	4	3	2	9	3	OLIVE, Galipoli	60	0	0	0	0	55	0
Lemon	5	0	7	0	3	6	6	Trieste	59	0	0	0	0	54	0
Lemongrass . . . per oz.	0	4	0	4½	0	4½	0	Levant	55	0	0	0	0	49	0
Neroli	0	5	0	6	0	0	0	Mogador	54	0	0	0	0	47	10
Nutmeg	0	4½	0	10	0	4	0	Spanish	58	0	59	0	0	51	0
Orange per lb.	5	0	7	0	5	0	7	Sicily	58	0	0	0	0	51	0
Otto of Roses . . per oz.	13	0	20	0	15	0	20	COCOAUT, Cochinchina . per ton	45	10	0	0	0	48	0
Peppermint:								Ceylon	42	0	42	10	0	46	0
American . . . per lb.	13	6	15	0	19	0	20	Sydney	35	0	40	0	0	40	0
English	32	0	42	0	38	0	43	GROUND NUT AND GINGELLY:							
Rosemary	1	9	2	0	1	9	2	Bombay	0	0	0	0	0	0	0
Sassafras	4	0	4	6	8	6	4	Madras	40	0	41	0	0	36	0
Spearment	4	0	16	0	12	0	24	PALM, fine	40	10	0	0	0	41	0
Thyme	1	10	2	0	1	10	4	LINSEED	31	0	0	0	0	28	0
Mace, expressed . . per oz.	0	1	0	2½	0	0½	0	RAPESEED, English, pale	44	0	44	10	0	34	10
OPIMUM, Turkey . . per lb.	35	0	36	0	44	0	40	brown	42	0	42	5	0	32	15
inferior	25	0	33	0	0	0	0	Foreign pale	45	10	46	0	0	33	0
QUASSIA (bitter wood) per ton	140	0	150	0	120	0	130	brown	42	10	0	0	0	0	0
RHUBARB, China, good and								COTTONSEED	30	10	37	10	0	26	0
fine per lb.	4	6	8	0	4	6	8	LARD	76	0	0	0	0	72	0
Good, mid. to ord. . .	0	8	4	3	1	0	4	TALLOW	35	0	0	0	0	37	0
Dutch trimmed . . .	9	6	10	0	0	0	0	TURPENTINE, American, cks.	29	0	0	0	0	25	6
Russian	0	0	0	0	0	0	0	PETROLEUM, Crude	14	0	0	0	0	14	0
ROOTS—Columba . . per cwt.	30	0	40	0	35	0	50	s. d.							
China	35	0	45	0	30	0	40	refined, per gall.	1	9½	1	11	0	1	11
Galangal	17	0	22	0	13	0	18	Spirit	1	4	1	6	0	8½	0
Gentian	19	0	0	0	16	0	0	SEEDS.							
Hellebore	22	0	30	0	22	0	30	s. d.							
Orris	38	0	44	0	38	0	42	CANARY per qr.	50	0	60	0	0	60	0
Pellitory	58	0	60	0	58	0	60	CARAWAY, English per cwt.	48	0	52	0	0	0	0
Pink per lb.	0	7	0	10	0	6	0	German, &c.	28	0	46	0	0	32	0
Rhatany	0	5	0	10	0	6	0	CORIANDER	20	0	22	0	0	18	0
Seneca	1	9	0	0	1	6	0	RHEUM per qr.	40	0	43	0	0	42	0
Snake	1	2	0	0	1	3	0	LINSEED, English per qr. . .	0	0	0	0	0	65	0
SAFFRON, Spanish . .	32	0	38	0	28	0	35	Black Sea & Azof	56	0	0	0	0	57	0
SALEP per cwt.	110	0	0	0	120	0	130	Calcutta	58	6	0	0	0	58	0
SARSAPARILLA, Lima per lb.	0	6	0	7	0	7	0	Bombay	59	6	0	0	0	59	0
Pare	1	0	1	3	1	0	1	St. Petersburg	54	0	55	0	0	55	0
Honduras	1	2	1	6	1	0	1	Mustard, brown . . per bsbl.	8	0	10	6	0	13	0
Jamaica	1	11	2	6	1	4	2	white	7	0	14	0	0	12	0
SASSAFRAS per cwt.	0	0	0	0	15	0	0	POPPY, East India per qr.	55	6	0	0	0	61	6
SCAMMONY, Virgin . . per lb.	28	0	32	0	28	0	35	SPICES.							
second & ordinary . .	10	0	23	0	10	0	23	CASSIA LIGNEA . . . per cwt.	120	0	130	0	0	130	0
SENA, Bombay	0	3½	0	6	0	2½	0	Vera	47	0	88	0	0	60	0
Tinnivelly	0	2	1	0	0	2	1	Buds	160	0	175	0	0	140	0
Alexandria	0	4	1	6	0	6	1	CINNAMON, Ceylon,							
SPEARMINT, refined . .	1	6	1	7	1	5	1	1st quality . . . per lb.	2	0	3	8	0	2	4
American	1	6	0	0	1	4	1	2nd do.	1	8	3	7	0	1	11
SQUILL	0	1½	0	2½	0	1	0	3rd do.	1	6	3	3	0	1	3
GUMS.								Tellicberry	1	0	2	9	0	0	0
AMMONIAC drop . . per cwt.	210	0	283	0	220	0	260	CLOVES, Penang	0	10	1	0	0	0	0
lump	120	0	200	0	140	0	240	Amboy	0	4½	0	53	0	6	5
ANIMI, fine washed	300	0	350	0	260	0	320	Zanzibar	0	2½	0	3	0	0	3½
bold scraped	220	0	300	0	190	0	260	GINSENG, Jam, fine per cwt.	110	0	200	0	0	90	0
sorts	160	0	200	0	110	0	180	Ord. to good	36	0	100	0	0	35	0
dark	80	0	100	0	80	0	100	African	25	0	0	0	0	27	6
ARABIC, E. I., fine								Bengal	24	0	25	0	0	30	0
pale picked	76	0	82	0	75	0	83	Malabar	0	0	0	0	0	0	0
srts, gd. to fin . .	65	0	74	0	60	0	72	Cochin	32	0	110	0	0	34	0
garblings	38	0	60	0	40	0	51	PEPPER, Blk, Malabar, per lb.	0	5	0	53	0	0	4½
TURKEY, pick. gd to fin.	170	0	210	0	170	0	220	White, Tellicberry . .	0	9	1	5	0	0	10
second & inf.	90	0	160	0	85	0	160	Cayenne	0	7	0	11	0	0	4
in sorts	75	0	100	0	75	0	105	MACE, 1st quality . . per lb.	3	2	3	10	0	2	6
Gedda	38	0	44	0	42	0	52	2nd and inferior . . .	2	6	3	0	0	1	6
BARBARY, white . . .	73	0	77	0	90	0	100	NUTMEGS, 78 to 60 to lb.	2	3	4	0	0	2	3
brown	70	0	77	0	72	0	78	90 to 80	2	2	2	7	0	1	7
AUSTRALIAN	25	0	47	0	35	0	44	132 to 95	1	7	2	1	0	1	2
ASSAFOTIDA, com. to gd.	40	0	100	0	75	0	110	VARIOUS PRODUCTS.							
BENJAMIN, 1st qual. . .	280	0	460	0	360	0	600	COCHINEAL—							
2nd	140	0	220	0	140	0	220	Honduras, black . . per lb.	2	8	3	10	0	3	2
3rd	60	0	120	0	55	0	110	silver	2	7	2	11	0	2	9
COPAL, Angola red . .	95	0	110	0	90	0	100	pasty	2	0	2	6	0	1	4
Benguella	90	0	105	0	85	0	95	Mexican, black	2	8	3	0	0	3	1
Sierra Leone . . per lb.	0	4	1	3	0	5½	1	silver	2	7	2	8	0	2	10
Manilla per cwt.	32	0	55	0	30	0	45	Teneriffe, black	2	9	4	0	0	3	0
DAMMAR, pale	77	6	85	0	87	6	92	silver	2	7	2	9	0	2	11
EUPHORIUM															